Final Status Survey
for
License Termination of
Heritage Minerals
NRC License # SMB-1541

Table of Contents **page #**

1.0 Introduction

From June 18, 2001 through October 19, 2001, decommissioning surveys were performed at the Heritage Minerals (HMI) Site in Lakehurst, New Jersey. The surveys were performed following the Final Site Survey Plan (the plan) previously approved by the NRC. A copy of the plan is provided as Appendix C. Background information for the site is provided in the plan and so will be excluded here. While the plan was followed as closely as possible, situations existed which made adjustments to the plan necessary. These adjustments are described for each individual survey unit as necessary elsewhere in this report.

2.0 Decommissioning Activities

The following list of activities is prescribed in NUREG-5849 as requirements leading to the termination of an NRC license, and serve as a rough work plan for this project.

- Terminate the possession and storage of radioactive material and remove radioactive material from the facility.
- Properly dispose of any radioactive material removed.
- Submit an NRC-314 "Disposition of Radioactive Materials" form.
- Conduct Final Site Survey.
- Submit report to the NRC.

2.1 Removal/Disposal of Material from the Facility

The bulk of the radioactive material HMI possessed was contained in the monazite pile area. This material was removed using inter-modal containers on trucks. The inter-modal containers were then transferred to rail cars and shipped to the International Uranium Corporation (IUC) in Blanding, Utah. All of the material in the pile and materials removed from the mills were accepted by IUC. These materials included the monazite ore as well as rubber, ductwork, and fire bricks that were removed from the mills as described below.

2.2 Final Site Survey

The final survey was performed as described in the plan with some exceptions that will be discussed with the individual survey units below. For most areas, surface surveys were conducted using Ludlum Model 12s in conjunction with Ludlum Model 43-68 Gas Proportional probes for alpha detection. Some areas, such as some smaller diameter pipes and launders, required a narrower probe. In these areas a Model 43-5 probe was used with the Model 12. Background reference measurements were taken in the former office building and warehouse. In addition to scanning the surface of each survey unit, approximately 30 scaler readings were taken, the results of which are presented in Appendix A. The locations of the scaler readings are indicated on the pictures or diagrams for each unit. These numbers also indicate the locations where smear samples were taken to analyze for removable radioactive contamination. The results of the smear analyses are presented with the scaler results. All results presented in the appendix are for alpha unless noted.

Outdoor areas were surveyed using a Ludlum Model 2221, serial number 105913 with a Ludlum model 44-10 (serial number PR107271) NaI detector. The areas were walked over with the probe suspended approximately 2 feet above the surface of the soil. The probe was moved back and forth in order to survey a larger area.

2.2.1 Affected Survey Units and Summary of Approach

Indoor

Affected equipment were surveyed by dismantling as necessary and scanning with an appropriate survey meter 100% of the surface area of a single equipment train within a multiple unit system. Unless otherwise indicated by circumstances, a minimum of thirty, fixed location, one minute integrated measurements were obtained on each survey unit. A wipe sample was obtained at the location of each fixed measurement.

Outdoor

Following the packaging of the monazite for shipment, outdoor affected survey units were scanned over 100% of the surface area with a 2"x2" sodium iodide crystal. Soil samples were collected at a rate of one per 100 square meter grid. The samples were sent to General Engineering Labs for analysis.

2.2.2 Unaffected Survey Units and Summary of Approach

Indoor

Unaffected units were surveyed by scanning a minimum of 20%, and usually 30% or more, of the surface area with an appropriate survey meter. This differed from the plan in that the plan required 10% of the surface area to be scanned. As with the affected survey units, a minimum of thirty fixed location measurements were obtained in each survey unit with corresponding wipe samples unless otherwise dictated by circumstances. If any measurement within a particular survey unit was greater than 25% of the value for unrestricted release provided in section 4.0 of the plan, then the entire survey unit was deemed to be affected and resurveyed according to the protocol for survey of affected units as provided in section 2.2.1.

Outdoor

Outdoor unaffected areas were scanned over 25% of their surface area, in the same manner as the affected areas. Thirty soil samples were collected from the unaffected area surrounding both mills. If any soil sample measurement within a particular survey unit is greater than 75% of the value for unrestricted release provided in section 4.0, then the entire survey unit is deemed to be affected and is resurveyed according to the more stringent protocol for survey of affected units as provided in section 6.1. While there is no reason to expect any of the unaffected areas to contain concentrations of monazite ore, the requirement to upgrade the survey on the basis of a conservative guideline approach offers assurance that the survey unit will be adequately characterized.

3.0 Summary of Procedures

Refer to the flow diagram in the FSSP.

Wet Mill Survey Units

3.1 Survey Unit (SU) 1 - New Feed Hopper and Silo - Unaffected

This series of large equipment located outdoors on the Dry Mill side of the processing facility consists of a New Feed Hopper, 2 conveyors, and a 200 ton capacity New Feed Silo. The New Feed Hopper, New Feed Silo, and conveyors to the Wet Mill Screen Feed were considered a single survey unit and were classified as unaffected in the FSSP. There were no pockets of accumulated material in this unit. Therefore, no decontamination was done. The conveyor belts were in place in this unit.

3.2 SU 2 - Wet Mill Screen Feed Sump - Unaffected

The Wet Mill Screen Feed Sump (2) consists of a mechanical screen that removed debris from the feed material and a large sump tank. The Wet Mill Screen Feed Sump (2), including the chute from the New Feed Hopper, was considered as a single survey unit. This unit was considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump to facilitate the survey.

3.3 SU 3 - Rougher Spirals Feed Sump - Unaffected

The Rougher Spirals Feed Sump (3), pump, and piping and distribution node leading to the Rougher Spirals (4), and the launder that feeds directly into the sump (direct feed launder) were considered as a single survey unit. SU 3 is considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump and the direct feed launder, as well as removal and emptying residual debris from the piping.

3.4 SU 4 - Rougher Spirals - Unaffected

The Rougher Spirals (4) consist of four banks of twenty, five-turn spiral separators operating in parallel. The Rougher Spirals (4) and the launders that they fed into were considered as a single survey unit. This unit was classified as unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.5 SU 5 - Cleaner Spirals Feed Sump - Unaffected

The Cleaner Spirals Feed Sump was missing from the mill. This survey unit consisted of the pump, piping and distribution node leading to the Cleaner Spirals. Decontamination consisted of removal of debris that accumulated in the direct feed launder, as well as removal and emptying residual debris from the piping.

3.6 SU 6 - Cleaner Spirals - Unaffected

The Cleaner Spirals consist of two banks of twenty, five-turn spirals. The Cleaner Spirals and the launders they feed into were considered as a single survey unit. The cleaner spirals were considered unaffected. This unit was classified as unaffected. Decontamination consisted of the removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.7 SU 7 - Recleaner Spirals Feed Sump - Unaffected

This survey unit consisted of the direct feed launder, Recleaner Spirals Feed Sump, pump, piping, and distribution node leading to the Recleaner Spirals. This unit is considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder, as well as removal and emptying residual debris from the piping.

3.8 SU 8 - Recleaner Spirals - Unaffected

The Recleaner Spirals consist of two banks of twenty, five-turn spirals. The Recleaner Spirals and the launder they feed into were considered as a single survey unit. This unit is considered unaffected. This unit was classified as unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.9 SU 9 - **Finisher Spirals Feed Sump** - Unaffected

The Finisher Spirals Feed Sump, the direct feed launder, pump, piping and distribution node leading to the Finisher Spirals were considered as a single survey unit. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder, as well as removal and emptying residual debris from the piping.

3.10 SU 10 - **Scavenger Spirals Feed Sump** - Unaffected

The Scavenger Spiral Feed Sump, the direct feed launders, piping and the distribution node leading to the Scavenger Spirals were considered as a single survey unit. SU10 is unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder, as well as removal and emptying residual debris from the piping.

3.11 SU 11 - Scavenger Spirals - Unaffected

The Scavenger Spirals and the launder that they fed into were considered as a single survey unit. The scavenger spirals are unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.12 SU 12 - Tails Transfer Sump - Unaffected

The Tails Transfer Sump, the direct feed launder, and piping were considered as a single survey unit. There was no pump found for this unit. This unit is unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.13 SU 13 - Thickener Sump - Unaffected

The Thickener Sump, the direct feed launder, and piping were considered as a single survey unit. There was no pump found for this unit. This unit was considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.14 SU 14 – Finisher Spirals - Unaffected

The Finisher Spirals and the launder that they fed into were considered as a single survey unit. The scavenger spirals are unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.15 SU 15 – Table Spirals Feed Sump - Unaffected

The Table Spirals Feed Sump, the direct feed launder, pump, piping and distribution node leading to the Table Spirals were considered as a single survey unit. This unit is considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.16 SU 16 – Table Spirals - Unaffected

The Table Spirals consist of two banks of eight, plastic, five-turn, double spirals. The Table Spirals and the launders they fed into were considered as a single survey unit. This unit is unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.17 SU 17 – Table Feed Sump - Affected

The Table Feed Sump, the direct feed launder, pump, and the piping to the Main Tables were considered as a single survey unit. This unit was considered to be an affected unit. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.18 SU 18 – Screw Feed Sump - Unaffected

The Screw Feed Sump and its direct feed launders were considered as a single survey unit. There was no pump with this unit. This unit was considered to be an affected unit. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.19 SU 19 – Screw Classifier - Unaffected

This equipment was removed early in the operation (prior to licensing) because it proved ineffective. During its use, it was part of the spiral circuit and was therefore unaffected. The survey unit consists of the screw only. Decontamination consisted of removal of debris that accumulated in the screw.

3.20 SU 20 – Screen Feed Sump - Unaffected

The Screen Feed Sump, the direct feed launder, pump, and piping to the Magnet Feed Sump were considered as a single survey unit. This unit is considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump and direct feed launder.

3.21 SU 21 – Magnet Feed Sump - Unaffected

This survey unit consists only of the Magnet Feed Sump and pump as it was disconnected from piping and had no feed launder associated with it. This unit is considered unaffected. Decontamination consisted of removal of debris that accumulated in the sump.

3.22 SU 22 – High Intensity Wet Magnetic Separator - Unaffected

The High Intensity Wet Magnetic Separator stands alone as a survey unit. This unit is unaffected. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.23 SU 23 – Magnetics Feed Sump - Unaffected

The Magnetics Feed Sump and its associated tank was considered as a single survey unit. This unit was unaffected. Decontamination consisted of removal of debris that accumulated in the sump.

3.24 SU 24 – Non-Magnetics Feed Sump - Unaffected

The Non-Magnetics Feed Sump and its associated tank was considered as a single survey unit. This unit was unaffected. Decontamination consisted of removal of debris that accumulated in the sump.

3.25 SU 25 – Table Scavenger Spirals - Unaffected

The Table Scavenger Spirals consists of two banks of twenty, five-turn spirals. The Table Spirals and the launders they fed into were considered as a single survey unit. This unit is unaffected. Decontamination consisted of removal of debris that accumulated in the spirals and the launder, as well as the vacuuming of the launder. In addition, the pipes that fed from the spirals to the launder were removed and emptied of debris.

3.26 SU 26 – Scavenger Table Feed Sump - Unaffected

The Scavenger Table Feed Sump and pump were not found in the wet mill. This unit was likely removed from the mill several years ago. Based on the survey results from the Table Scavenger Spirals and the Scavenger Table Separators, it is believed that this unit was not contaminated above the limits for release found in the FSSP. The former location of this unit was identified and is shown in the appendix.

3.27 SU 27 – Scavenger Table Separators - Affected

The Scavenger Table Separators and middlings recycling piping were considered as a single survey unit. This survey unit was affected. Decontamination consisted of removing debris that had accumulated on the tables and in the piping.

3.28 SU 28 – Tails Sump - Unaffected

The Tails Sump, direct feed launder, pump, and exit piping were considered as a single survey unit. This unit is considered unaffected. No decontamination was performed on this unit. However, there was a large quantity of water in the sump that was pumped into the main building sump.

3.29 SU 29 – Main Table Separators - Affected

The Main Table Separators and middlings recycling piping were considered as a single survey unit. This survey unit was affected. Decontamination consisted of removing debris that had accumulated on the tables and in the piping, and removing the rubber liner on the tables.

3.30 SU 30 – Classifier Cyclone Feed Sump - Affected

The Classifier Cyclone Feed Sump, pump, direct feed launder and piping to the Hydro Classifier were considered as a single survey unit. Decontamination consisted of removal of debris that accumulated in the sump.

3.31 SU 31 – Hydro Classifier - Affected

The Hydro Classifier was considered as a single survey unit. Decontamination consisted of removal of debris that accumulated in the trough under the unit.

3.32 SU 32 – Dryer Filter Feed Sump - Affected

The Dryer Filter Feed Sump was not found on site. The former location of this unit was identified and is shown in the appendix.

Dry Mill Survey Units

The results of the surveys of the conveyor belts that were not in place in the dry mill are presented at the end of this section. This includes all belts for the lower section of the mill that could not be associated with a specific survey unit because they were detached from the mechanics of the conveyor system. All belts were surveyed as affected areas.

3.33 SU 33 – Dryer – Affected

The Dryer, conveyor, and elevator, and cyclone were considered as one survey unit. The unit is affected. Decontamination consisted of removal of the fire bricks from the furnace portion of the dryer. In addition, accumulated deposits of monazite enriched sands were removed from the concrete structures that support the dryer, as well as from inside the dryer unit. Finally, it was determined that the concrete pad that supported the cyclone had been made using monazite enriched sands. The pad was removed by breaking it into small pieces after the cyclone unit was removed from the pad. A soil sample was taken from the bottom of the pit that had housed the concrete pad before the pit was filled in for safety reasons.

3.34 SU 34 – Flue Gas Scrubber – Unaffected, reclassified as Affected

The flue gas scrubber was originally classified as unaffected. However, it was determined that the scrubber was affected after the initial survey of the unit. The rubber lining that was on the entire inside of the unit was contaminated above the specified release limits. Attempts were made at cleaning the liner, as well as removing it. All attempts failed. Therefore, it was decided that the entire unit would be taken down and disposed. The cyclone unit that remained was then added to the Dryer as part of survey unit 33.

3.35 SU 35 – Rougher High Tension Separators - Affected

There are sixteen identical units in the bank of Rougher High Tension Separators operating in parallel. All sixteen units were considered as a single survey unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.36 SU 36 – Cleaner High Tension Separators - Affected

There are sixteen identical units in the bank of Cleaner High Tension Separators operating in parallel. All sixteen units, conveyors, and elevators from the Rougher High Tension Separators (35) were considered as a single survey unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.37 SU 37 – Re-Cleaner High Tension Separators - Affected

There are sixteen identical units in the bank of Re-Cleaner High Tension Separators operating in parallel. All sixteen units, conveyors, and elevators from the Cleaner High Tension Separators were considered as a single survey unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.38 SU 38 – Plate Separators - Unaffected

The Plate Separator, conveyors, and elevators from the Zircon Magnetic Separators (42) were considered as a single survey unit. This unit is unaffected because it only treated the conductive minerals (Ti minerals) and no monazite could have reached the unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.39 SU 39 – Leucoxene Magnetic Separators - Unaffected

There are two identical units in the bank of Leucoxene Magnetic Separators operating in parallel. Both units, conveyors, and elevators from the Plate Separators (38) were considered as a single survey unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.40 SU 40 – Finisher High Tension Separators - Unaffected

There are two identical units in the bank of Finisher High Tension Separators operating in parallel. The Finisher High Tension Separators, conveyors, and elevators from the Leucoxene Magnetic Separators (39) will be considered as a single survey unit. This unit is unaffected. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.41 SU 41 – Rutile Plate Separators - Unaffected

The Rutile Plate Separator, conveyors, and elevators from the Finisher High Tension Separators (40) were considered as a single survey unit. This unit is also unaffected because it treated only a high-titanium, low-monazite stream. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.42 SU 42 – Zircon Magnetic Separators - Affected

There are six identical units in the bank of Zircon Magnetic Separators (42) operating in parallel. All six units, conveyors, and elevators from the Re-Cleaner High Tension Separators (37) will be considered as a single survey unit. No decontamination was performed on this unit, however, in order to facilitate the survey, the unit had to be partially dismantled.

3.43 SU 43 – Monazite Transfer Sump - Affected

The Monazite Transfer Sump was detached from any launders or pumping system and stood alone as a survey unit. There was no decontamination performed on this unit.

3.44 SU 44 – Dry Mill Floor and Walls up to 2 m - Affected

The concrete floor and lower walls of the Dry Mill were surveyed as an affected area. The floor was vacuumed with all material being placed on the monazite pile prior to surveying.

3.45 SU 45 – Wet Mill Floor and Walls up to 2 m - Unaffected

The portion of the concrete and earthen floor and lower walls of the eastern half of the Wet Mill (excluding that portion beneath the ASARCO spirals) were surveyed as an unaffected area. The floor was power washed prior to surveying.

3.46 SU 46 – Dry Mill Bag House - Unaffected

The bag house is located outside the Dry Mill and consists of four (4) identical filter units. This survey unit was considered unaffected. Accumulated sands in the ductwork leading to the Bag House had to be removed prior to surveying.

3.47 ASARCO Spirals - Unused

The ASARCO Spirals occupy approximately one half of the area of the Wet Mill. There are about 750 separator spirals included in the ASARCO process. These were not used in the HMI separation process. These spirals and the sumps servicing them remained unused since ASARCO stopped operations in 1982. They are therefore not included in this survey.

4.0 Monazite Pile

The monazite pile was enclosed in a wood slat fence and covered with tarpaulins held down by old tires. A staging area was set up immediately outside the existing fence using new metal fencing to serve as a buffer zone between the controlled area and the clean area. The tires were removed from the pile and stacked inside the fence. The tires were then surveyed for fixed and removable alpha contamination. No tires were found to be contaminated above the levels for release for this project. The tires were therefore released from the area and shipped for rubber recycling.

Under the tarps, some monazite was contained in 55-gallon drums. This material was emptied from the drums and the drums were then surveyed for release in the same manner as the tires. Several of the drums required cleaning to get their radiation levels below the release limits for this project. This was done by power washing the drums in the pile area. Water was supplied by Heritage Minerals in the form of a large tank on site. Hoses were attached to the tank with water pumps to help increase the water pressure for various uses. The drums were surveyed again once they dried. The drums were sent for recycling.

Loading an inter-modal container.

4.0 Monazite Pile (cont)

The material in the monazite pile was packaged in DOT approved inter-modal containers and shipped via truck and rail to IUC. This was accomplished using a front-end loader to transfer the material. Dust control measures consisted of a water spray system in the area surrounding operations. Areas of higher activity were identified by surveying the area with a sodium iodide detector for higher levels of gamma radiation. Residual monazite sands on surface soils in the affected areas were removed in a similar manner.

Monazite pile area after cleanup.

Following loading and packaging of the monazite and contouring of the pile area, a walk over survey was performed using a Ludlum Model 2221, serial number 105913 with a Ludlum model 44-10 (serial number PR107271) NaI detector. A grid was then established in the area to facilitate soil sampling. The sample locations were marked using orange flags. The samples were then sent to General Engineering Labs for independent analysis. The results of the analyses are presented in Appendix B.

5.0 Survey Results

The survey results are presented in Appendix A. The results shown represent the final status of the site. All results are shown in dpm/100 cm^2 alpha. The MDAs shown varied based on the instrument background for each instrument and each day of the survey. A digital camera was used to take photographs of the equipment that was surveyed. The pictures were edited to show the locations of the fixed and removable measurements by inserting numbers on the photographs. In some cases, the same photograph was used for multiple survey units where the equipment was identical except in use. Larger areas are represented using drawings.

All areas in the wet and dry mills were found to be below the release limits for this project set forth in the FSSP. Some units that were originally designated as unaffected units had to be reclassified as affected units. While there is detectable residual radioactivity, most notably in the dry mill, most of the activity is in areas that are not easily accessible. The radioactivity that remains is predominantly of a fixed nature. Furthermore, all areas of accumulated sands and debris that were accessible were removed. This indicates that the risk of exposure to individuals is minimal. The results of the survey are presented in Appendix A.

The survey of the areas outside the mills resulted in the discovery of no areas of elevated gamma levels when compared to the background levels of the area. Soil samples were taken at a depth of 1 foot around the two mills. A total of 41 samples were obtained and analyzed by gamma spectroscopy by General Engineering Labs (GEL). A total of 6 of the samples, four from the wet mill (WM 15, 16, 17 and 18) and two from the dry mill (DM 14 and 15) slightly exceeded the 10 pCi/g limit for free release for total thorium set forth in the FSSP. The highest sample, WM 15 contained only 19.17 pCi/gram for total thorium. The average for total thorium averaged over all of the samples taken around the wet mill was 4.41 pCi/gram. The average for total thorium averaged over all of the samples taken around the dry mill was 4.44 pCi/gram. These averages are well below the release limit. No samples taken from either mill exceeded the 10 pCi/gram limit for total uranium.

The monazite pile was surveyed in a manner similar to the areas outside the mills, except that 100 percent coverage was performed on the pile area. A total of 27 samples were taken from the pile area. Again, the samples were taken at a depth of 1 foot and were analyzed by GEL. A total of 5 of the samples (MPF 5, 11, 23, 25, and 26) slightly exceeded the 10 pCi/g limit for free release for total thorium and total uranium set forth in the FSSP. The highest sample, MPF 23 contained only 17.58 pCi/gram for total thorium. The original thorium levels of the monazite pile were about 1,000 pCi/gram. The average for total thorium averaged over all of the samples was 4.4 pCi/gram. This average is well below the release limit. No samples exceeded 10 pCi/gram for total uranium.

5.0 Survey Results (cont)

Wet Mill area of total thorium slightly greater than 10 pCi/gram..

The results of the soil sample analyses for the mills and the monazite pile area are presented in Appendix B. Drawings indicating the approximate location for each sample are included.

APPENDIX A

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	1	< MDA	18	85
2	2	< MDA	19	90
3	1	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, hopper, back view

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
4	1	< MDA	13	< MDA
5	6	< MDA	27	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, inside hopper, back end

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	2	< MDA	10	< MDA
7	3	< MDA	18	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, inside hopper, incline end

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	3	< MDA	14	55
9	3	< MDA	38	175
10	6	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, main conveyor

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	1	< MDA	17	80
12	5	< MDA	26	125
13	1	< MDA	23	110
14	6	< MDA	20	95
15	3	< MDA	13	60
16	1	< MDA	14	65
17	0	< MDA	13	60
18	7	< MDA	13	60
19	0	< MDA	15	70
20	2	< MDA	16	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, main conveyor, lower loop

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	1	< MDA	7	< MDA
22	4	< MDA	6	< MDA
23	8	< MDA	17	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, inside lower bldg.

Notes:

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
24	7	< MDA	7	< MDA
25	5	< MDA	22	95
26	2	< MDA	10	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 8/22/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 8/22/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, conveyor

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	7	< MDA	2	< MDA
28	7	< MDA	11	50

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/23/01
MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/23/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, second conveyor, lower section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
29	4	< MDA	17	70
30	4	< MDA	4	< MDA
31	2	< MDA	18	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, second conveyor, upper section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
32	2	< MDA	4	< MDA
33	4	< MDA	21	100
34	4	< MDA	28	135

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 1 **Survey Unit:** New Feed Hopper and Silo, second conveyor, underside

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
35	7	< MDA	26	125
36	3	< MDA	20	95
37	2	< MDA	2	< MDA
38	4	< MDA	3	< MDA
39	0	< MDA	9	40

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, front and right sides with pump

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	3	< MDA
2	5	< MDA	3	< MDA
3	4	< MDA	5	< MDA
4	1	< MDA	13	60
5	3	< MDA	10	45
6	4	< MDA	2	< MDA
7	2	< MDA	15	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

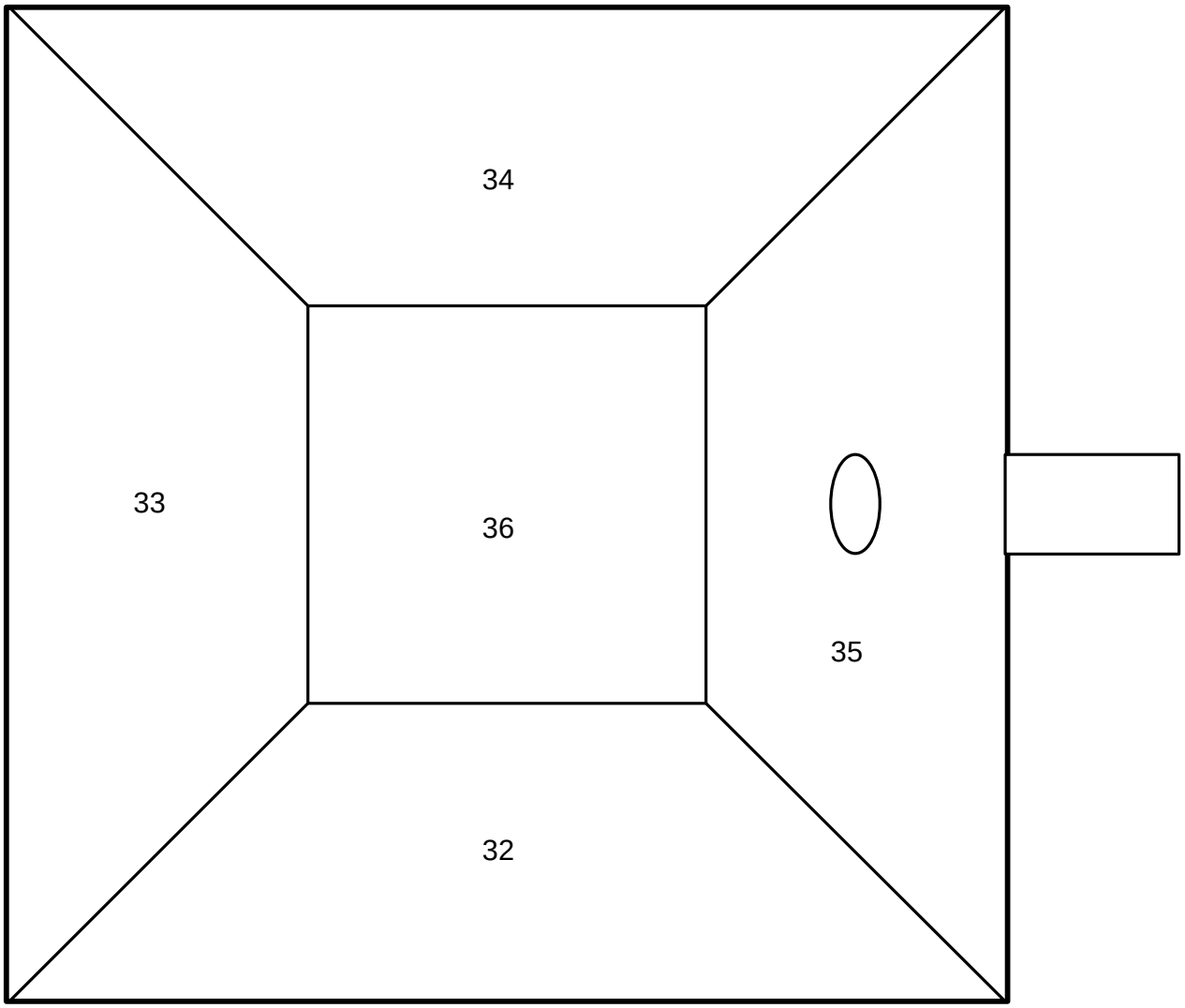
Serial Number: 134488

Survey date: 9/7/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, inside, top view

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
32	3	< MDA	292	1455
33	5	< MDA	85	420
34	4	< MDA	87	430
35	1	< MDA	192	955
36	3	< MDA	95	470

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, back and left sides

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	3	< MDA	10	45
9	4	< MDA	62	305
10	2	< MDA	10	45
11	4	< MDA	6	< MDA
12	6	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/7/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, inside feed screen and exterior of launder

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	2	< MDA	11	50
14	4	< MDA	18	85
15	2	< MDA	20	95
16	2	< MDA	24	115
17	2	< MDA	8	< MDA
18	2	< MDA	20	95

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/7/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, inside chute showing material deflector

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	2	< MDA	14	65
20	4	< MDA	8	< MDA
21	2	< MDA	16	75
22	4	< MDA	18	85
23	3	< MDA	64	315
24	1	< MDA	16	75
25	5	< MDA	8	< MDA
26	0	< MDA	40	195

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/7/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, inside chute looking down at screen

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	6	< MDA	25	120
28	2	< MDA	11	50
29	6	< MDA	28	135
30	3	< MDA	40	195
31	2	< MDA	25	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/7/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 2 **Survey Unit:** Wet Mill Feed Sump, inside

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
32	0	< MDA	292	1450
33	4	< MDA	85	415
34	0	< MDA	87	425
35	1	< MDA	192	950
36	3	< MDA	95	465

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

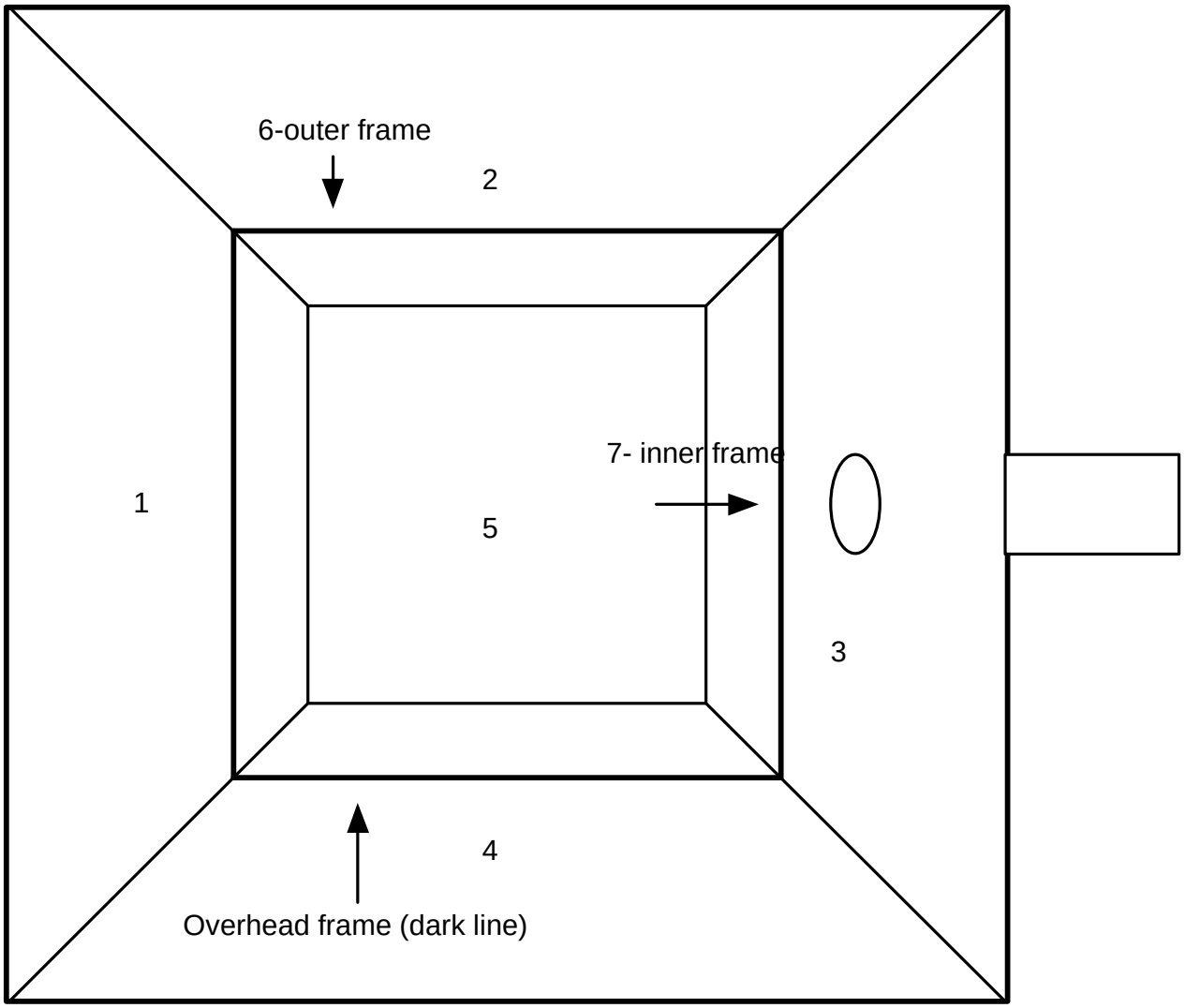
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump

Notes: Unaffected.
Pump missing.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	30	140
2	4	< MDA	29	135
3	2	< MDA	89	435
4	7	< MDA	29	135
5	7	< MDA	97	475
6	1	< MDA	7	< MDA
7	4	< MDA	8	< MDA

Smear Info

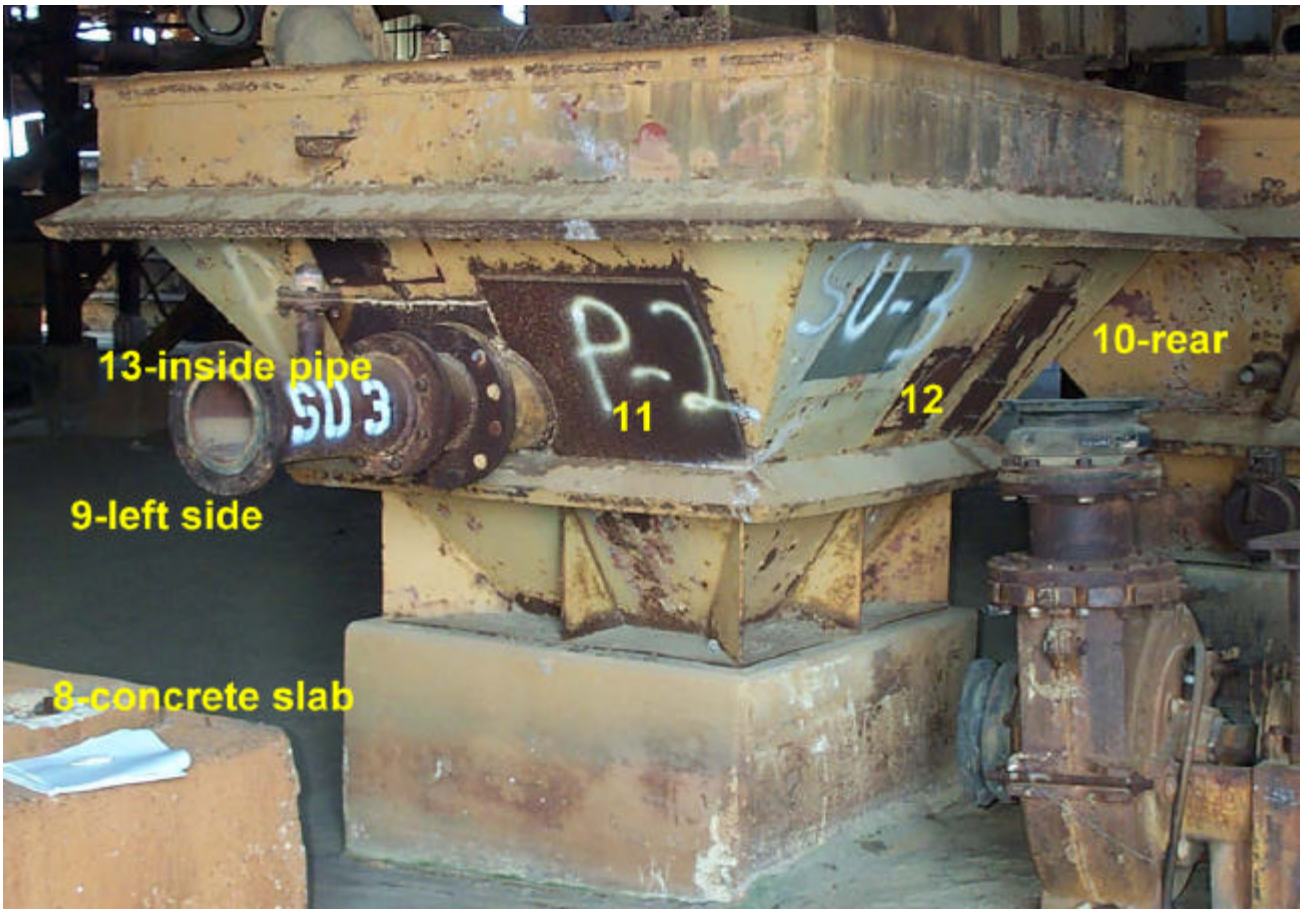
Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/2/01
MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/2/01
MDA = 46 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump

Notes: Unaffected. Pump missing.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	0	< MDA	27	135
9	3	15	8	40
10	2	< MDA	15	75
11	2	< MDA	50	250
12	5	25	23	115
13	4	20	18	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/9/01

MDA = 14 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

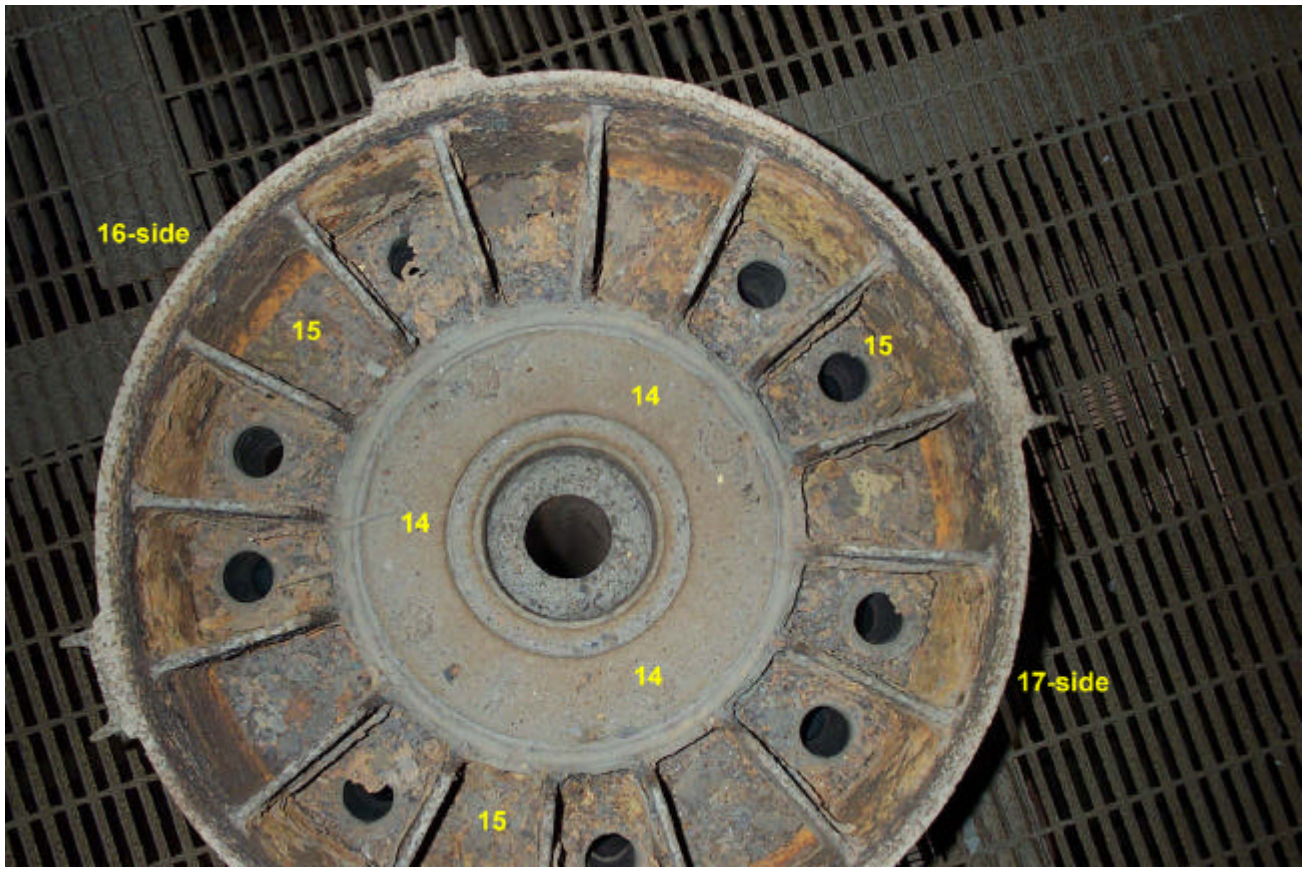
Serial Number: 134488

Survey date: 7/9/01

MDA = 14 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump, distribution node.

Notes: Unaffected. Pump missing.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	3	< MDA	7	< MDA
15	1	< MDA	4	< MDA
16	1	< MDA	10	< MDA
17	3	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

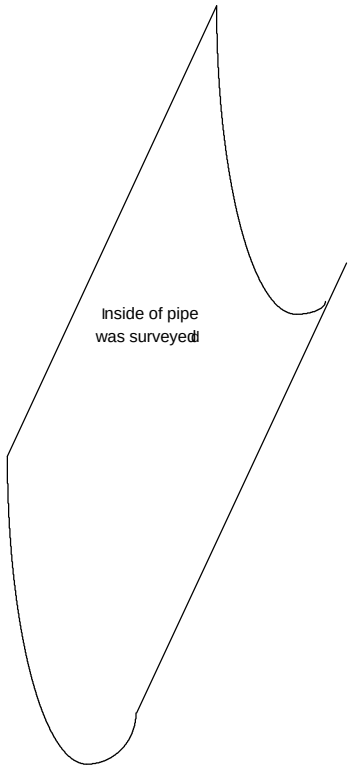
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump, representation of rubber piping to and from node.

Notes: Unaffected. Pump missing.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	2	< MDA	2	< MDA
19	4	< MDA	0	< MDA
20	3	< MDA	7	< MDA
21	12	50	5	< MDA
22	3	< MDA	4	< MDA
23	4	< MDA	7	< MDA
24	5	< MDA	5	< MDA
25	2	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

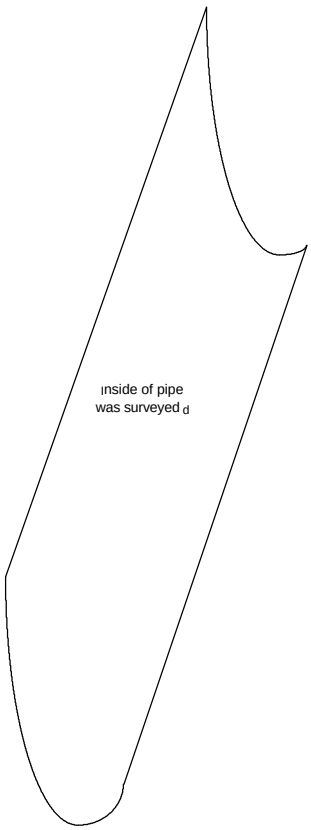
Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump, representation of rubber piping to and from node.

Notes: Unaffected. Pump missing.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	4	< MDA	2	< MDA
27	6	< MDA	0	< MDA
28	1	< MDA	7	< MDA
29	3	< MDA	5	< MDA
30	4	< MDA	3	< MDA
31	2	< MDA	13	55
32	1	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

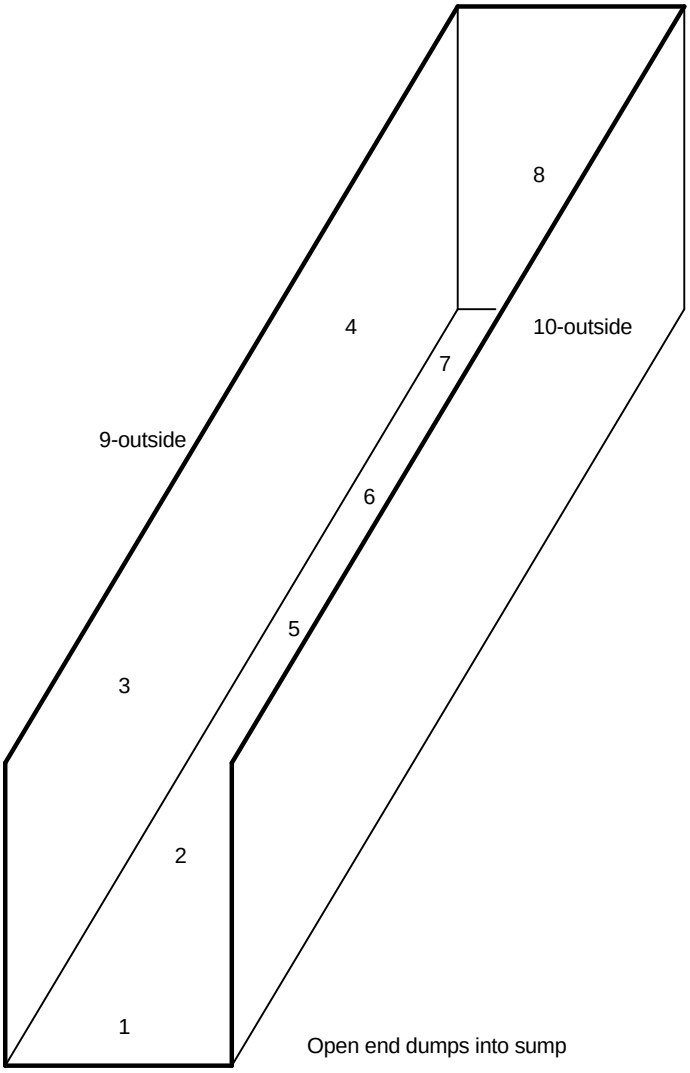
Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 3 **Survey Unit:** Rougher Spirals Feed Sump, direct feed launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	7	< MDA	32	150
34	6	< MDA	31	145
35	4	< MDA	35	165
36	7	< MDA	27	125
37	7	< MDA	29	135
38	8	< MDA	31	145
39	6	< MDA	30	140
40	6	< MDA	25	115
41	7	< MDA	26	120
42	8	< MDA	31	145

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 4 **Survey Unit:** Rougher Spirals

Notes: Unaffected.
Locations 1 thru 10 are inside the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	0	< MDA	2	< MDA
2	0	< MDA	18	75
3	1	< MDA	18	75
4	0	< MDA	9	< MDA
5	2	< MDA	20	85
6	2	< MDA	13	< MDA
7	0	< MDA	21	90
8	1	< MDA	19	80
9	4	< MDA	9	< MDA
10	1	< MDA	18	75

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 4 **Survey Unit:** Rougher Spirals

Notes: Unaffected.
Locations 11 thru 15 are inside the spiral.
Locations 16 thru 20 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	1	< MDA	18	75
12	2	< MDA	11	< MDA
13	1	< MDA	4	< MDA
14	0	< MDA	7	< MDA
15	0	< MDA	11	< MDA
16	6	< MDA	3	< MDA
17	6	< MDA	4	< MDA
18	3	< MDA	4	< MDA
19	1	< MDA	3	< MDA
20	3	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 4 **Survey Unit:** Rougher Spirals

Notes: Unaffected.
Locations 21 thru 30 are on the outside of the spiral..

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	4	< MDA	3	< MDA
22	3	< MDA	2	< MDA
23	2	< MDA	4	< MDA
24	0	< MDA	7	< MDA
25	4	< MDA	9	< MDA
26	6	< MDA	6	< MDA
27	1	< MDA	7	< MDA
28	4	< MDA	7	< MDA
29	3	< MDA	12	< MDA
30	4	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 4 **Survey Unit:** Rougher Spirals, launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	2	< MDA	26	100
32	6	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 4 **Survey Unit:** Rougher Spirals, launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	1	< MDA	4	< MDA
34	1	< MDA	18	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 5 **Survey Unit:** Cleaner Spirals Feed Sump-Pump only

Notes: Unaffecetd.
#6 scaler reading taken with 43-5 probe, MDA=134 dpm/100 cm2.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	18	< MDA
2	6	< MDA	16	< MDA
3	3	< MDA	25	100
4	5	< MDA	22	85
5	4	< MDA	11	< MDA
6	2	< MDA	14	< MDA

Smear Info

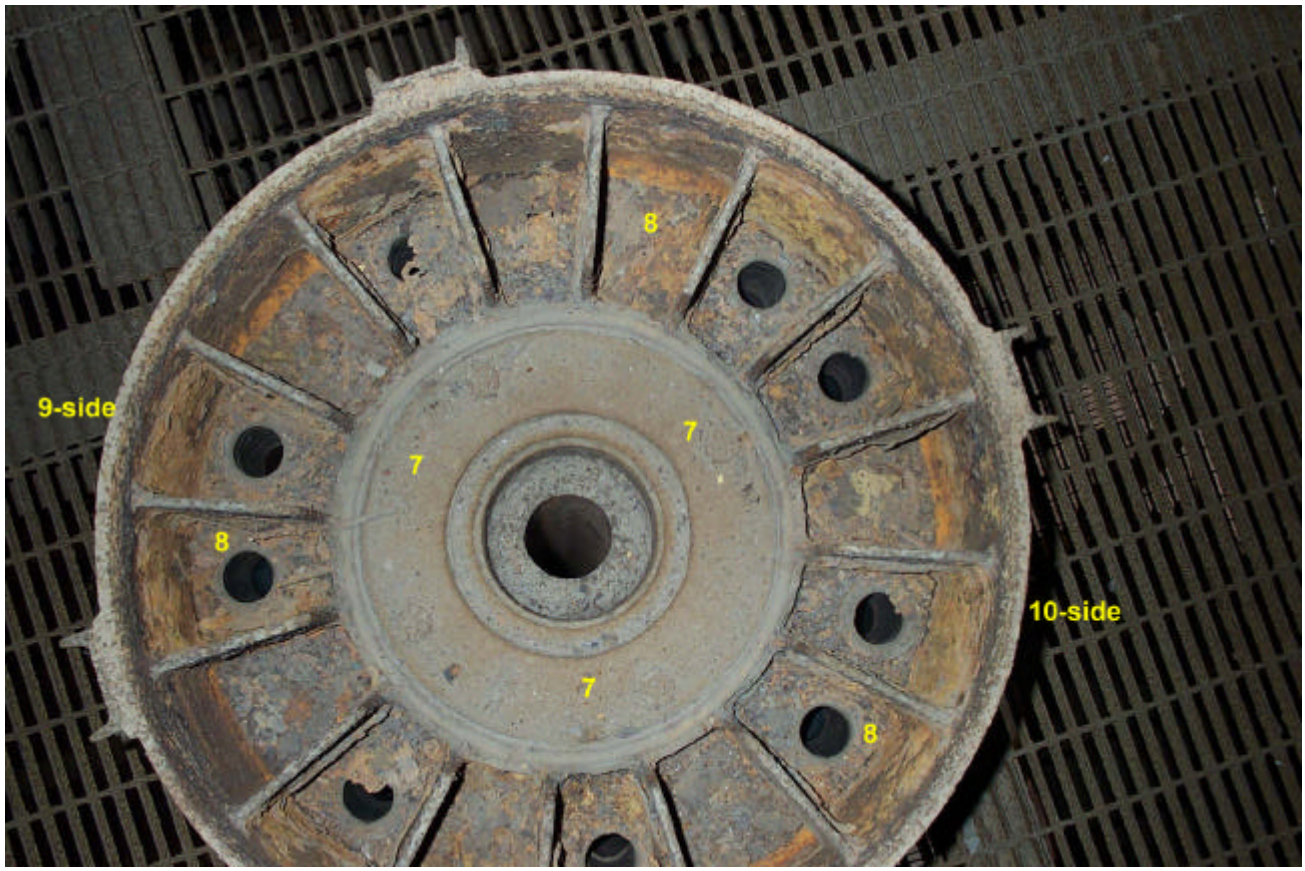
Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/16/01
MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/16/01
MDA = 66 dpm/100 cm2

Survey Unit Number: 5 **Survey Unit:** Cleaner Spirals Feed Sump-Distribution node

Notes: Unaffecetd.
No sump with unit.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	2	< MDA	7	< MDA
8	1	< MDA	11	< MDA
9	0	< MDA	4	< MDA
10	1	< MDA	3	< MDA

Smear Info

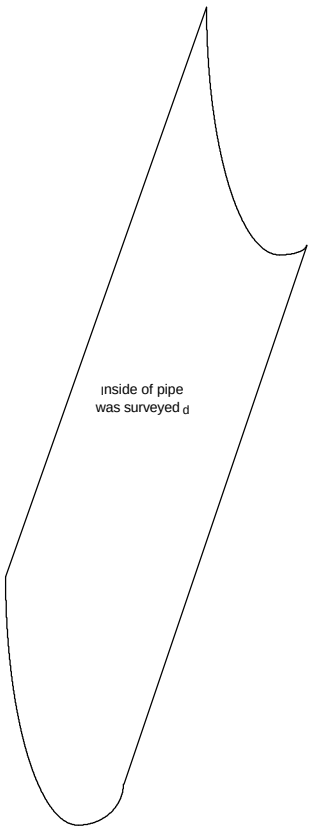
Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 9/11/01
MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 9/11/01
MDA = 46 dpm/100 cm2

Survey Unit Number: 5 **Survey Unit:** Cleaner Spirals Feed Sump-Pipes

Notes: Unaffecetd.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	2	< MDA	8	< MDA
12	4	< MDA	3	< MDA
13	2	< MDA	13	55
14	1	< MDA	4	< MDA
15	2	< MDA	3	< MDA
16	3	< MDA	9	< MDA
17	2	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

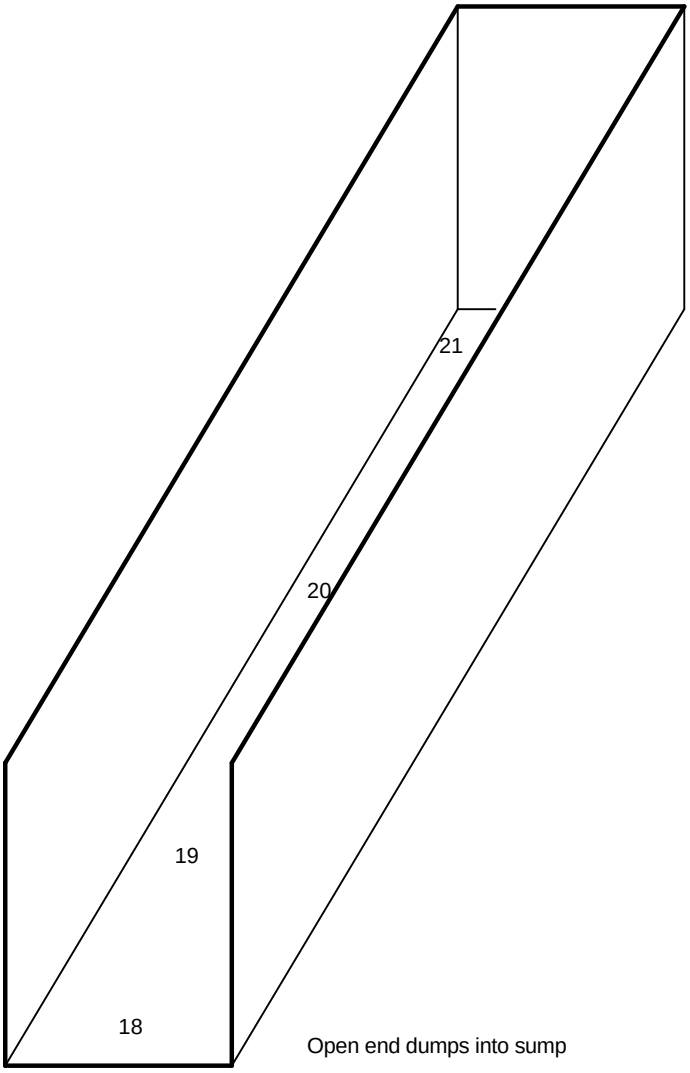
Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 5 **Survey Unit:** Cleaner Spirals Feed Sump-Direct Feed Launder

Notes: Unaffecetd.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	2	< MDA	8	< MDA
19	4	< MDA	3	< MDA
20	2	< MDA	13	55
21	1	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals

Notes: Unaffected.
Locations 1 thru 10 are inside the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	12	< MDA
2	0	< MDA	9	< MDA
3	3	< MDA	14	55
4	2	< MDA	27	120
5	7	< MDA	17	70
6	3	< MDA	8	< MDA
7	4	< MDA	16	65
8	4	< MDA	12	< MDA
9	3	< MDA	10	< MDA
10	2	< MDA	16	65

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals

Notes: Unaffected.
Locations 11 thru 15 are inside the spiral.
Locations 16 thru 20 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	2	< MDA	8	< MDA
12	1	< MDA	7	< MDA
13	5	< MDA	17	70
14	5	< MDA	4	< MDA
15	3	< MDA	7	< MDA
16	1	< MDA	2	< MDA
17	0	< MDA	5	< MDA
18	0	< MDA	2	< MDA
19	1	< MDA	1	< MDA
20	4	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals

Notes: Unaffected.
Locations 21 thru 30 are on the outside of the spiral..

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	1	< MDA
22	2	< MDA	2	< MDA
23	1	< MDA	3	< MDA
24	0	< MDA	7	< MDA
25	0	< MDA	2	< MDA
26	1	< MDA	3	< MDA
27	0	< MDA	7	< MDA
28	1	< MDA	4	< MDA
29	2	< MDA	3	< MDA
30	0	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals, launders beneath the spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	3	< MDA	17	< MDA
32	2	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals, launders beneath the spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	2	< MDA	9	< MDA
34	4	< MDA	18	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

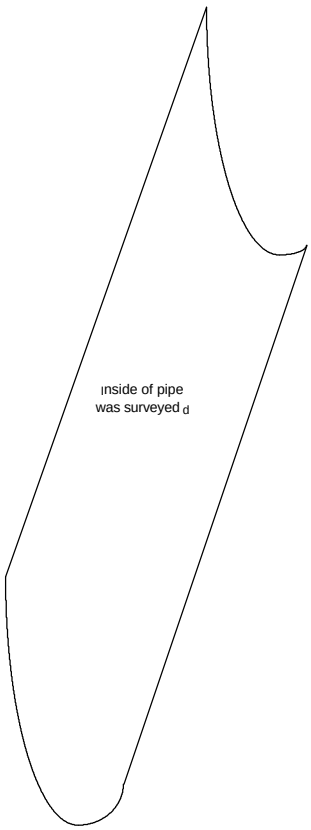
Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 6 **Survey Unit:** Cleaner Spirals, rubber pipes

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
35	7	< MDA	5	< MDA
36	1	< MDA	2	< MDA
37	3	< MDA	12	< MDA
38	0	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

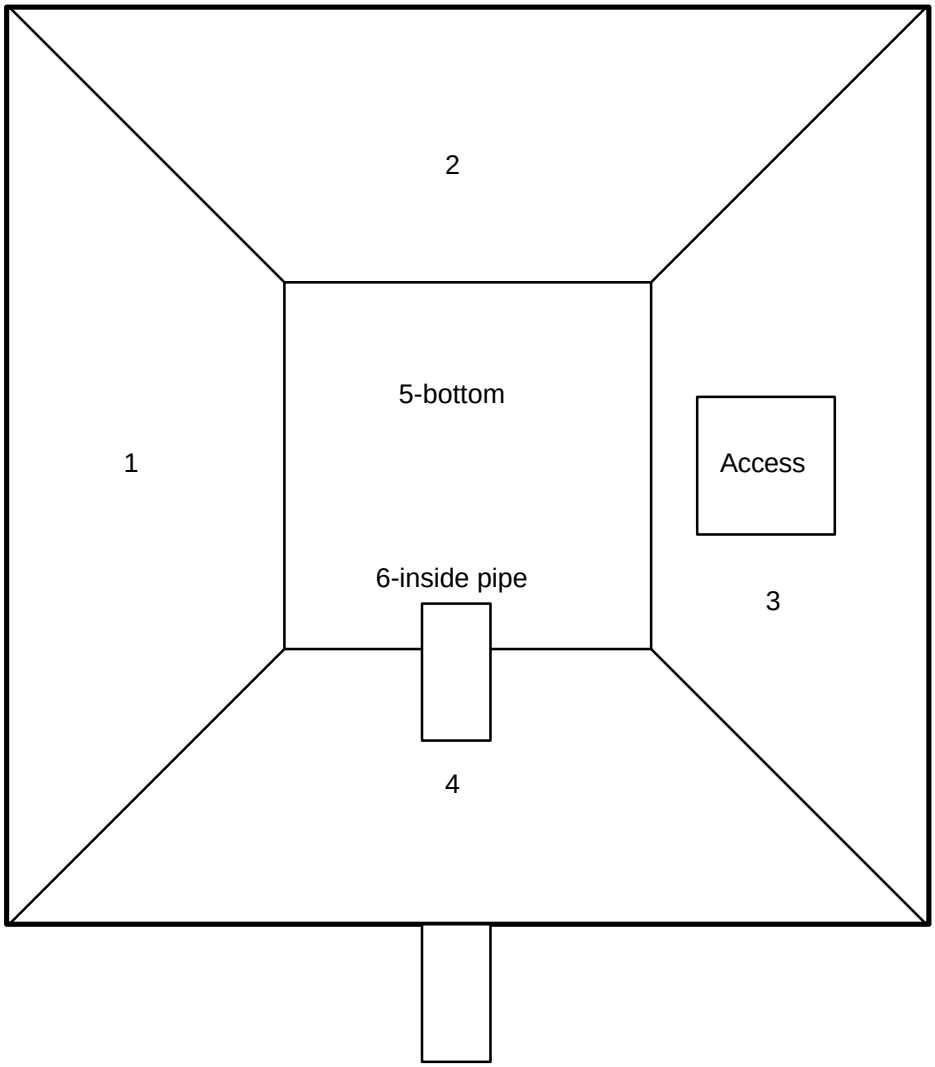
Serial Number: 161133

Survey date: 9/6/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump with Pump

Notes:



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	9	< MDA	22	100
2	10	< MDA	25	115
3	4	< MDA	14	60
4	6	< MDA	31	145
5			117	575
6			11	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump with Pump

Notes:

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	9	< MDA	22	100
8	10	< MDA	29	135
9	4	< MDA	30	140
10	6	< MDA	21	95

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump, two sides opposite pump

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	4	< MDA	21	95
12	4	< MDA	16	70
13	4	< MDA	64	310
14	7	< MDA	33	155

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

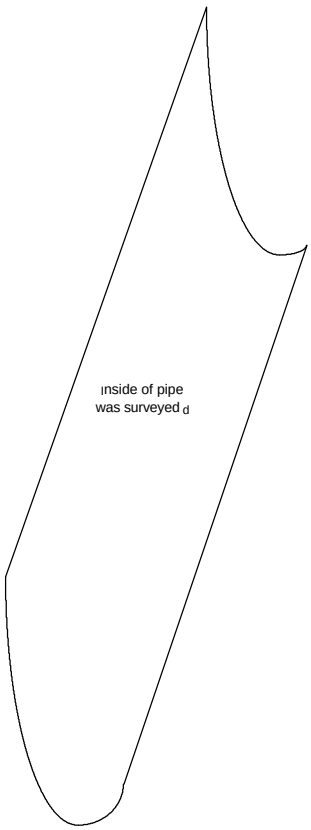
Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump-Pipes

Notes: Unaffected. 10' sections. Interior of pipes surveyed.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	4	< MDA	5	< MDA
16	0	< MDA	3	< MDA
17	1	< MDA	3	< MDA
18	2	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

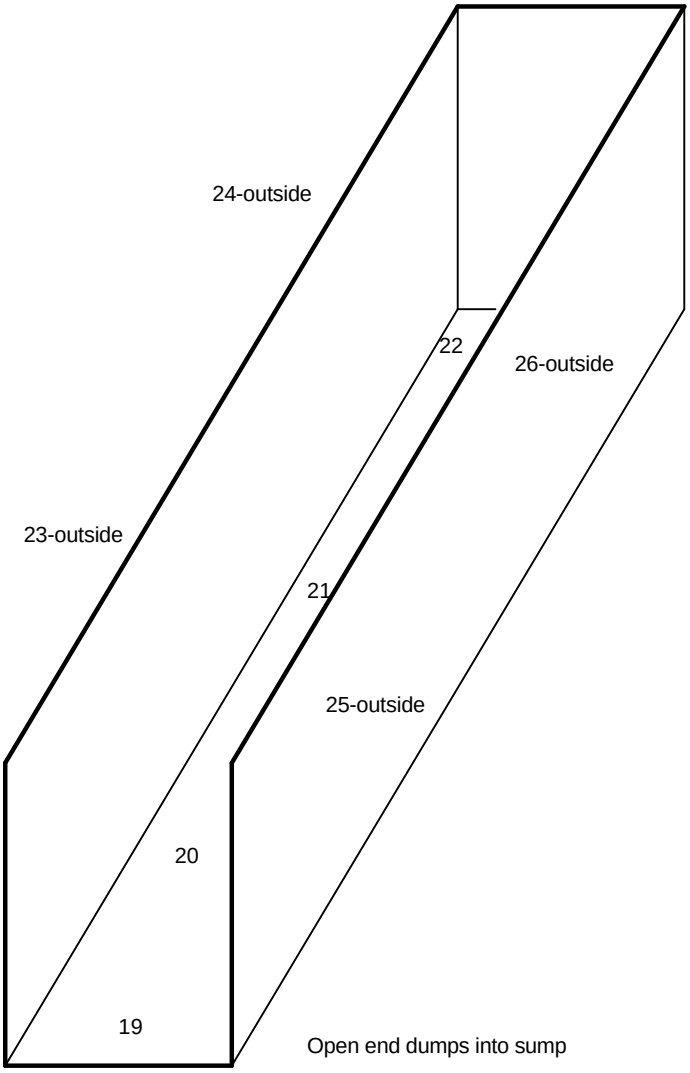
Serial Number: 134488

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump, direct feed launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	4	< MDA	32	150
20	6	< MDA	18	80
21	6	< MDA	38	180
22	5	< MDA	44	210
23	6	< MDA	18	80
24	7	< MDA	19	85
25	6	< MDA	23	105
26	4	< MDA	18	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

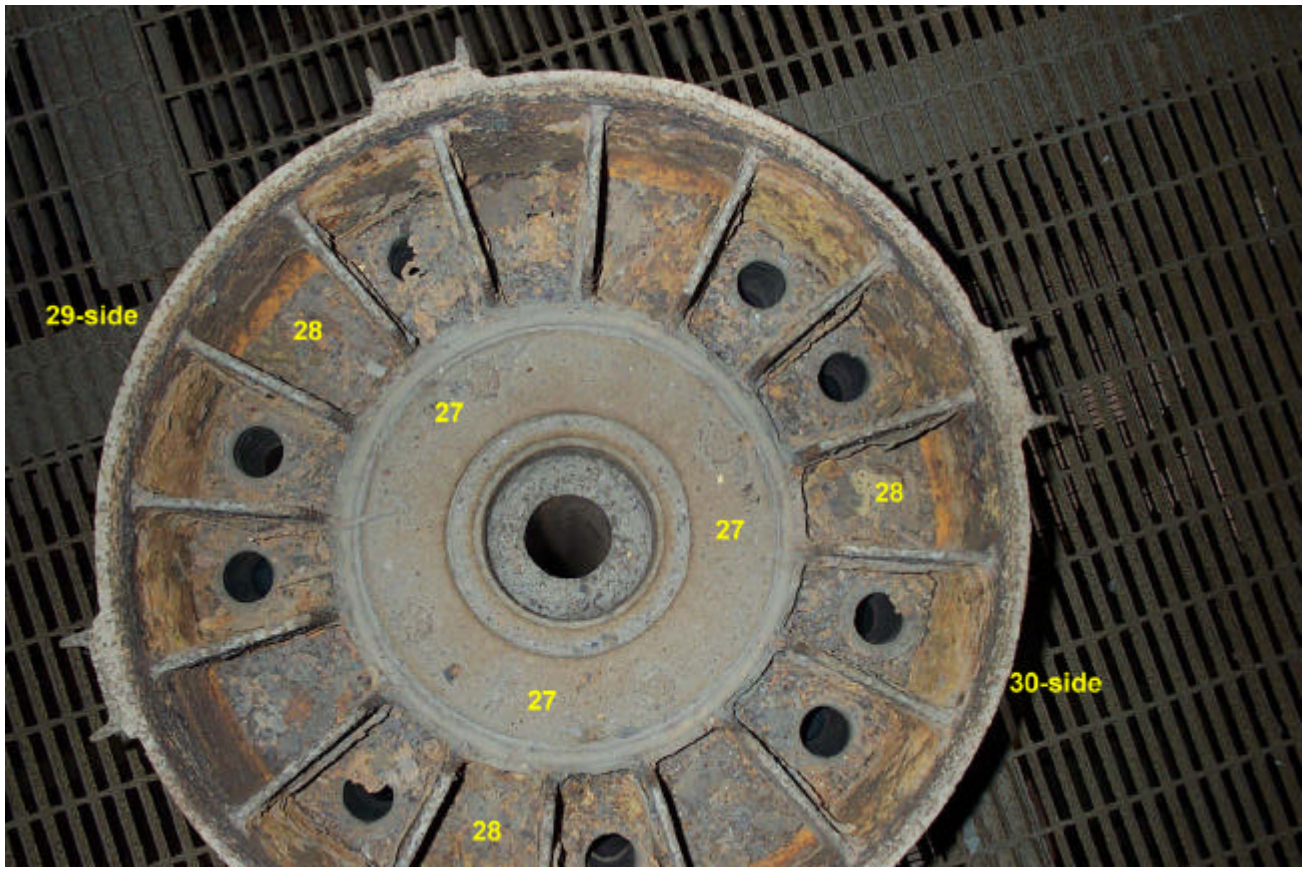
Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 7 **Survey Unit:** Recleaner Spirals Feed Sump, distribution node

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	1	< MDA	16	70
28	2	< MDA	5	< MDA
29	3	< MDA	4	< MDA
30	0	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 8 **Survey Unit:** Recleaner Spirals

Notes: Unaffected.
Locations 1 thru 10 are inside the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	14	55
2	2	< MDA	16	65
3	1	< MDA	7	< MDA
4	2	< MDA	23	100
5	2	< MDA	15	60
6	1	< MDA	13	< MDA
7	2	< MDA	8	< MDA
8	3	< MDA	16	65
9	1	< MDA	15	60
10	3	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 8 **Survey Unit:** Recleaner Spirals

Notes: Unaffected.
Locations 11 thru 15 are inside the spiral.
Locations 16 thru 20 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	1	< MDA	19	80
12	5	< MDA	12	< MDA
13	2	< MDA	8	< MDA
14	2	< MDA	10	< MDA
15	0	< MDA	9	< MDA
16	2	< MDA	10	< MDA
17	1	< MDA	5	< MDA
18	2	< MDA	9	< MDA
19	2	< MDA	10	< MDA
20	2	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 8 **Survey Unit:** Recleaner Spirals

Notes: Unaffected.
Locations 21 thru 30 are on the outside of the spiral..

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	4	< MDA	7	< MDA
22	0	< MDA	6	< MDA
23	1	< MDA	1	< MDA
24	2	< MDA	4	< MDA
25	1	< MDA	10	< MDA
26	1	< MDA	3	< MDA
27	1	< MDA	7	< MDA
28	0	< MDA	3	< MDA
29	0	< MDA	4	< MDA
30	2	< MDA	14	55

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/6/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 8 **Survey Unit:** Recleaner Spirals, launders beneath the spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	3	< MDA	5	< MDA
32	1	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 8 **Survey Unit:** Recleaner Spirals, launders beneath the spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	2	< MDA	5	< MDA
34	1	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

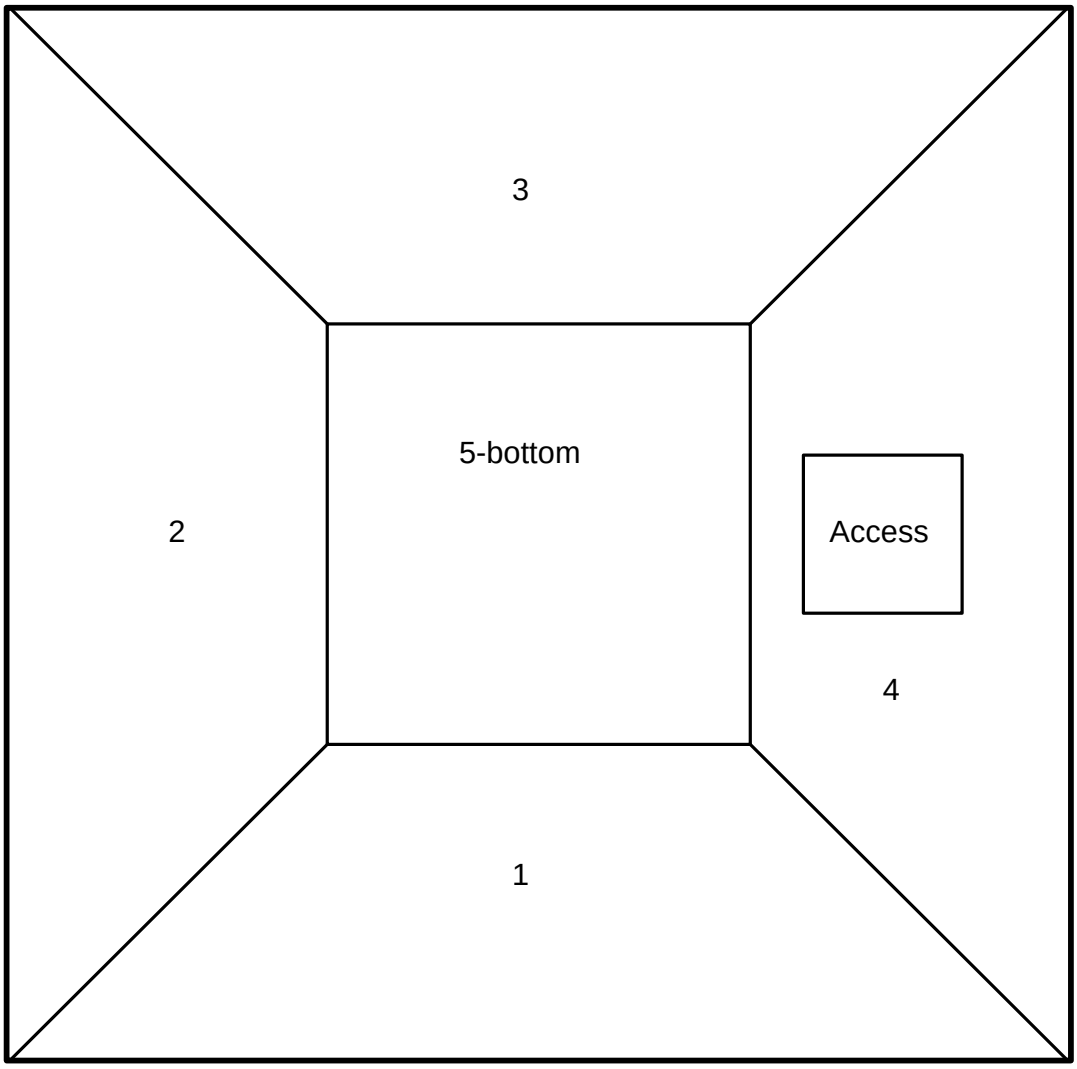
Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 9 **Survey Unit:** Finisher Spirals Feed Sump-interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	19	85
2	4	< MDA	30	140
3	3	< MDA	29	135
4	4	< MDA	70	340
5	6	< MDA	74	360

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 9 **Survey Unit:** Finisher Spirals Feed Sump with Pump

Notes: Unaffected.
All readings taken on the exterior of the sump.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	0	< MDA	10	< MDA
7	4	< MDA	76	370
8	1	< MDA	40	190
9	2	< MDA	36	170
10	2	< MDA	16	70
11	3	< MDA	3	< MDA
12	16	70	16	70
13	20	90	20	90
14	24	110	24	110

Smear Info

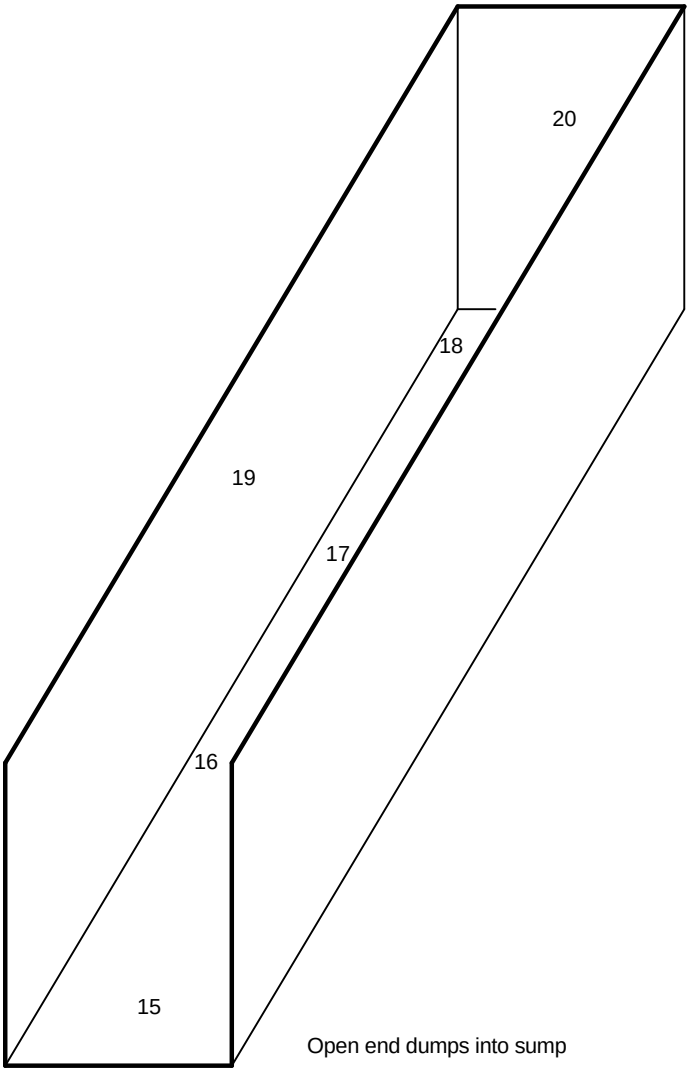
Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/14/01
MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/14/01
MDA = 46 dpm/100 cm2

Survey Unit Number: 9 **Survey Unit:** Finisher Spirals Feed Sump, Feed Launder, midsection

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	5	< MDA	52	250
16	6	< MDA	11	45
17	6	< MDA	16	70
18	4	< MDA	9	35
19	5	< MDA	9	35
20	7	< MDA	49	235

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

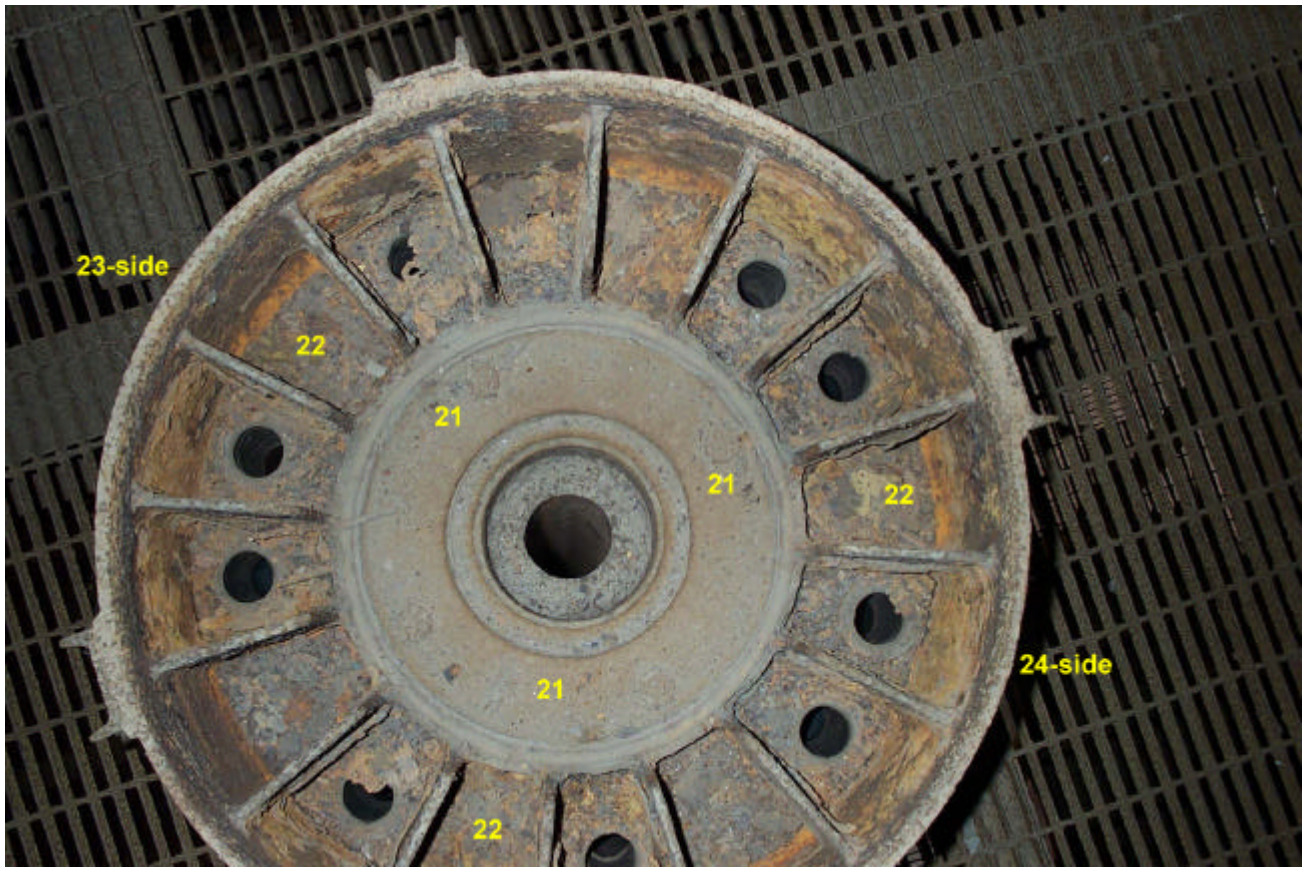
Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 9 **Survey Unit:** Finisher Spirals Feed Sump, distribution node

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	8	< MDA
22	0	< MDA	5	< MDA
23	0	< MDA	28	130
24	0	< MDA	11	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

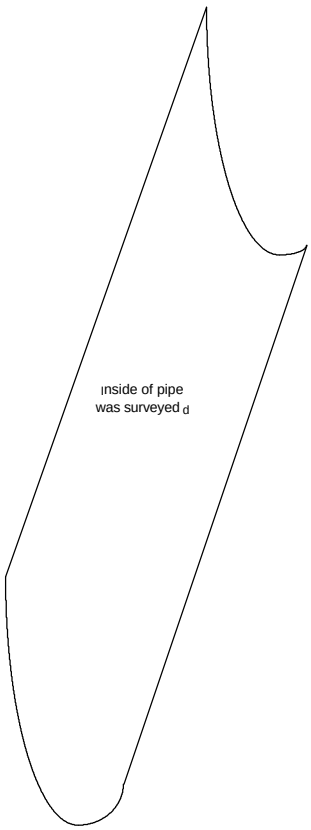
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 9 **Survey Unit:** Finisher Spirals Feed Sump, pipes

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
25	7	< MDA	6	< MDA
26	2	< MDA	3	< MDA
27	2	< MDA	6	< MDA
28	3	< MDA	3	< MDA
29	2	< MDA	1	< MDA
30	2	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/6/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 ? **Survey Unit:** Miscellaneous Pump 1

Notes: Pump found in wet mill detached from sump. Surveyed as an affected unit. Believed to belong to SU 10.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

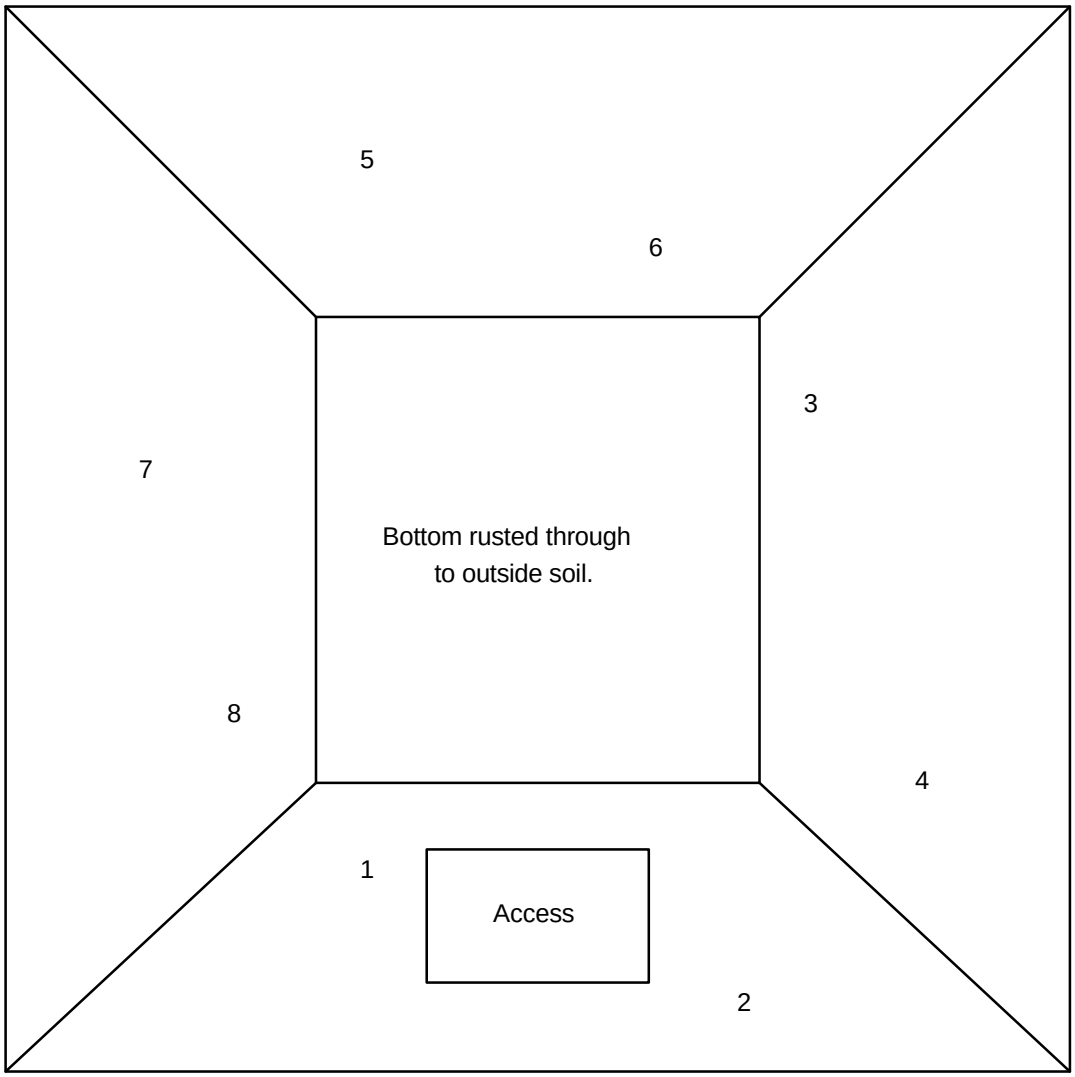
Serial Number: 134488

Survey date: 8/23/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	72	350
2	6	< MDA	75	365
3	12	50	90	440
4	4	< MDA	53	255
5	6	< MDA	92	450
6	6	< MDA	34	160
7	8	< MDA	60	290
8	3	< MDA	50	240

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

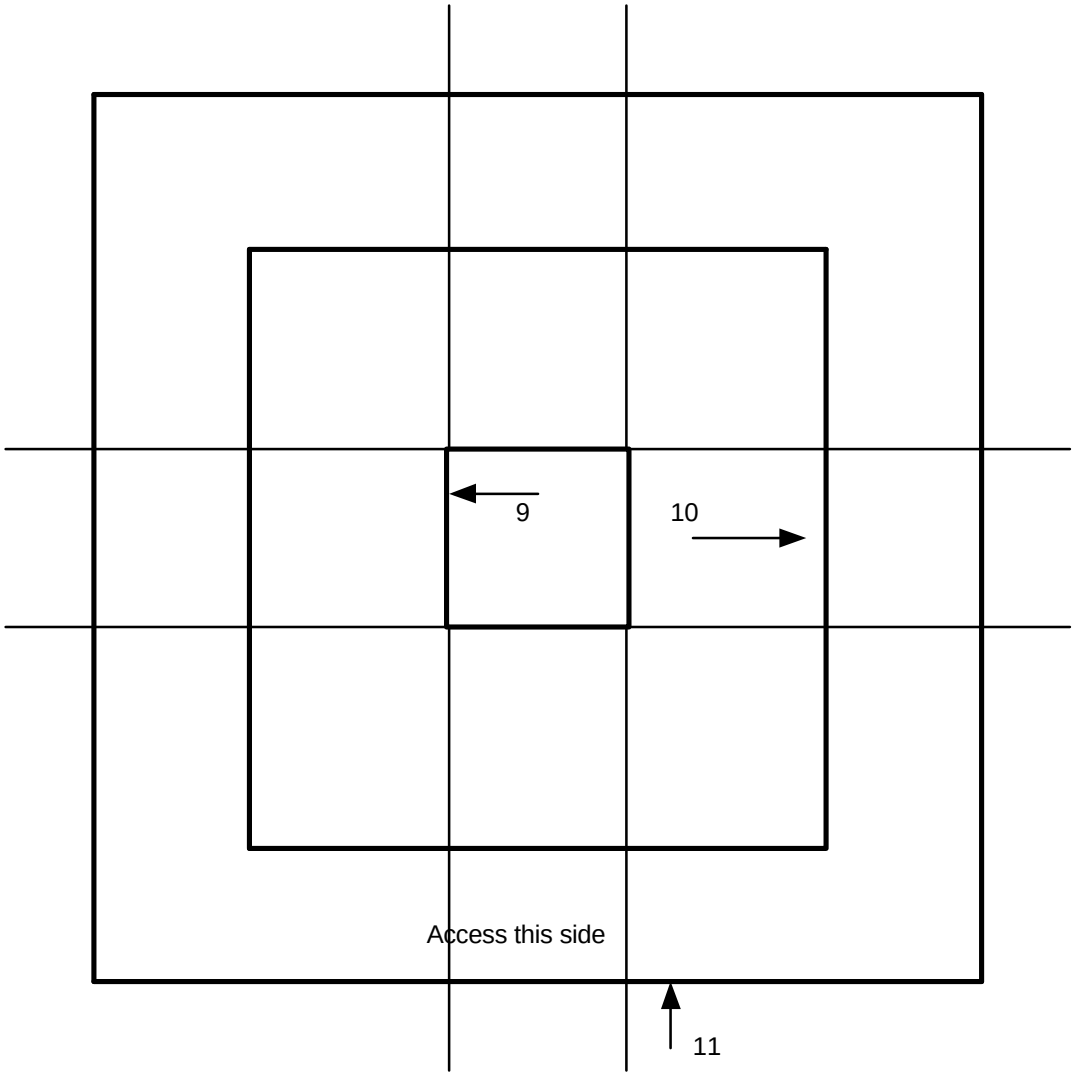
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump-Frame suspended above sump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	0	< MDA	20	90
10	0	< MDA	7	< MDA
11	2	< MDA	11	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

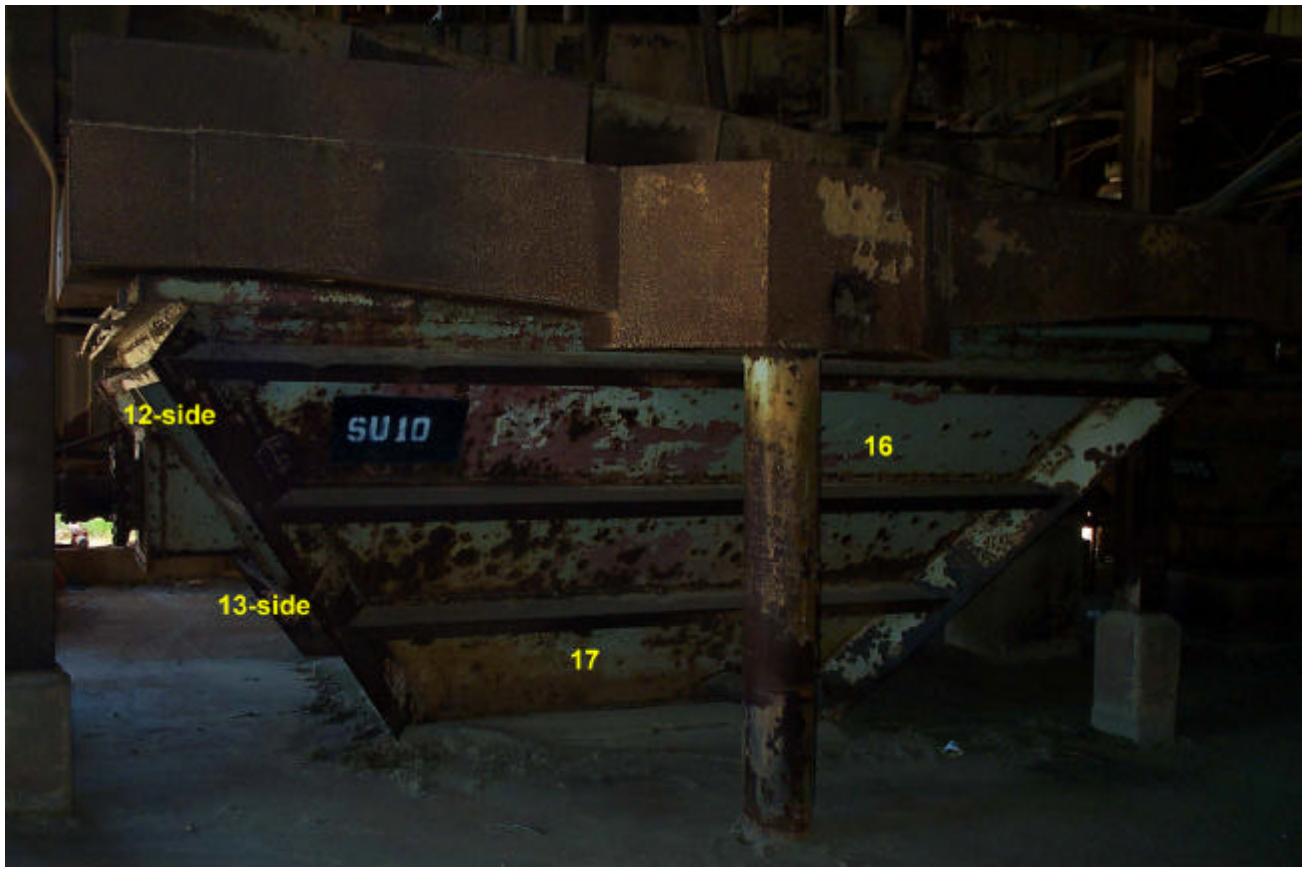
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	1	< MDA	7	< MDA
13	2	< MDA	39	185
16	4	< MDA	13	55
17	3	< MDA	16	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/10/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

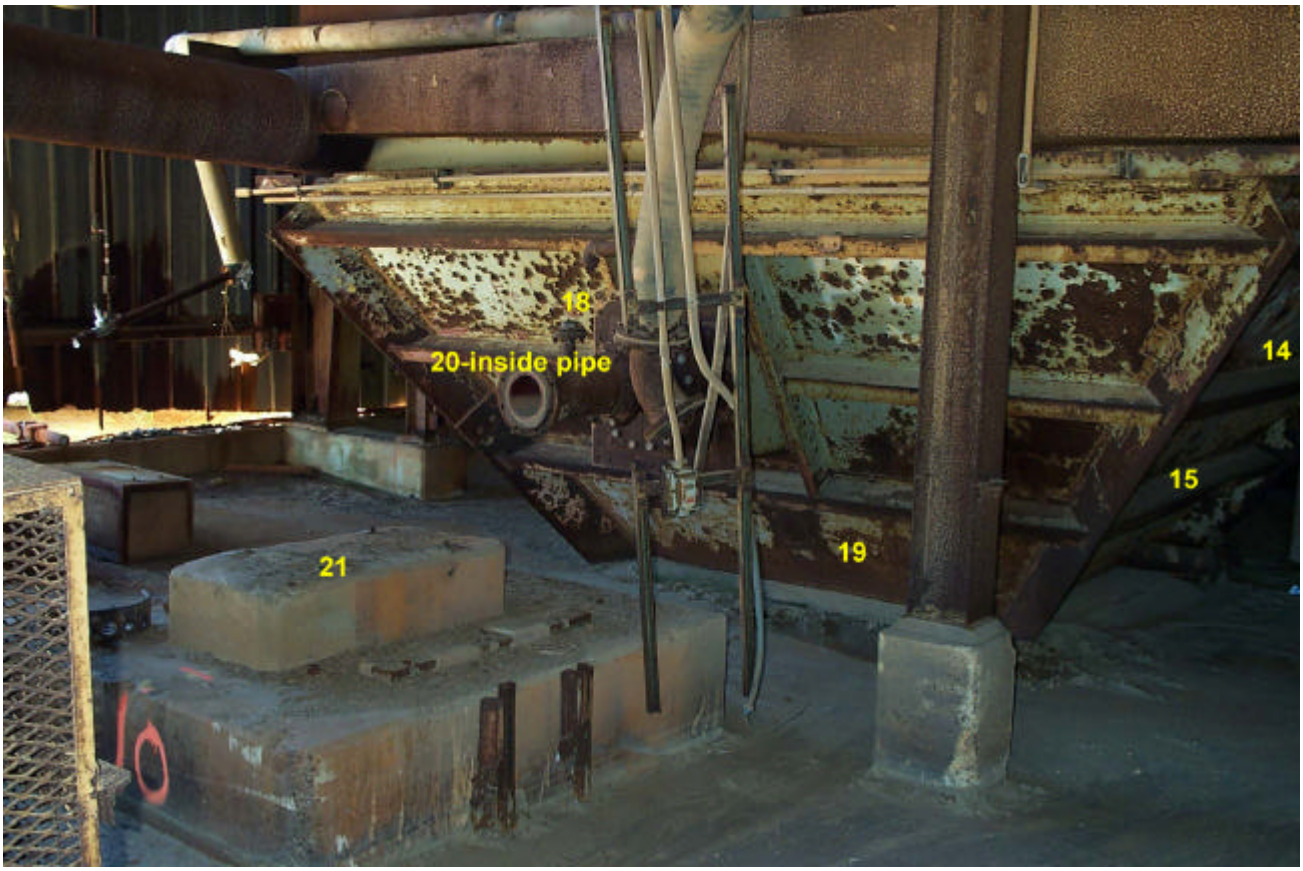
Serial Number: 134488

Survey date: 7/10/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump-showing no pump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	0	< MDA	6	< MDA
15	2	< MDA	12	55
18	3	< MDA	16	75
19	0	< MDA	21	100
20	5	< MDA	19	90
21	3	< MDA	71	350

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

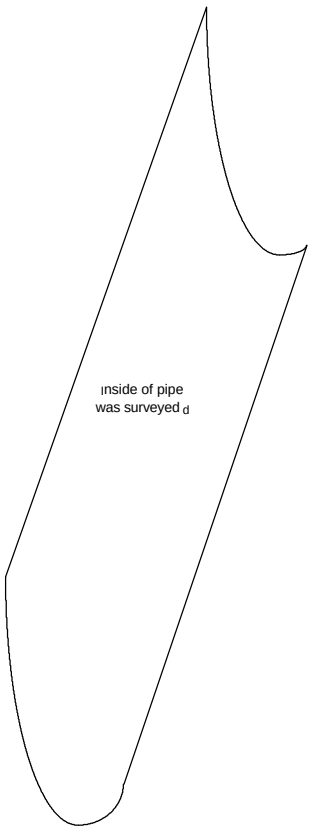
Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump-Pipes

Notes: Unaffected. 10' sections.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
22	3	< MDA	5	< MDA
23	0	< MDA	2	< MDA
24	5	< MDA	3	< MDA
25	5	< MDA	9	< MDA
26	2	< MDA	8	< MDA
27	1	< MDA	7	< MDA
28	1	< MDA	2	< MDA
29	3	< MDA	4	< MDA
30	3	< MDA	6	< MDA
31	3	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

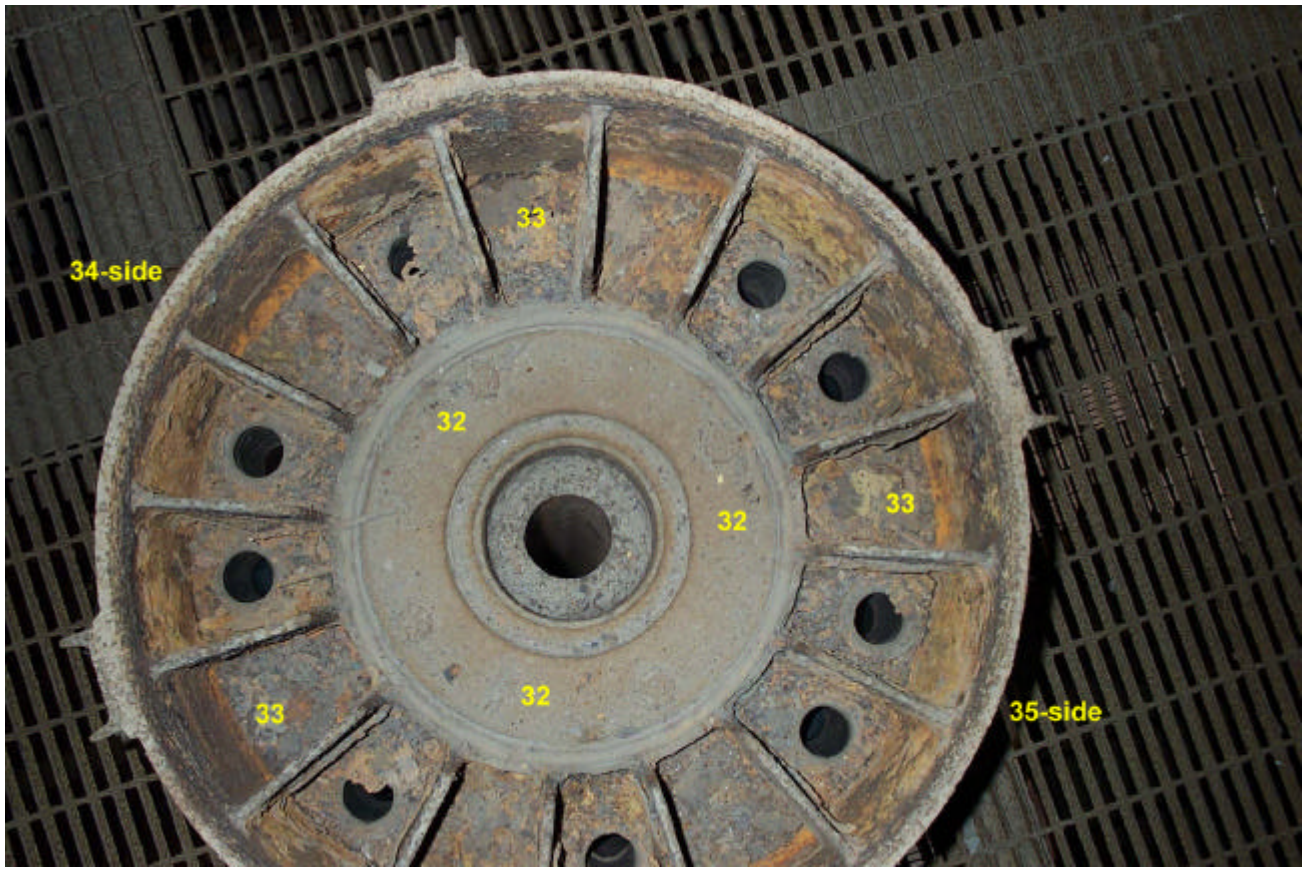
Serial Number: 134488

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump-Distribution node

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
32	3	< MDA	5	< MDA
33	0	< MDA	2	< MDA
34	5	< MDA	3	< MDA
35	5	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

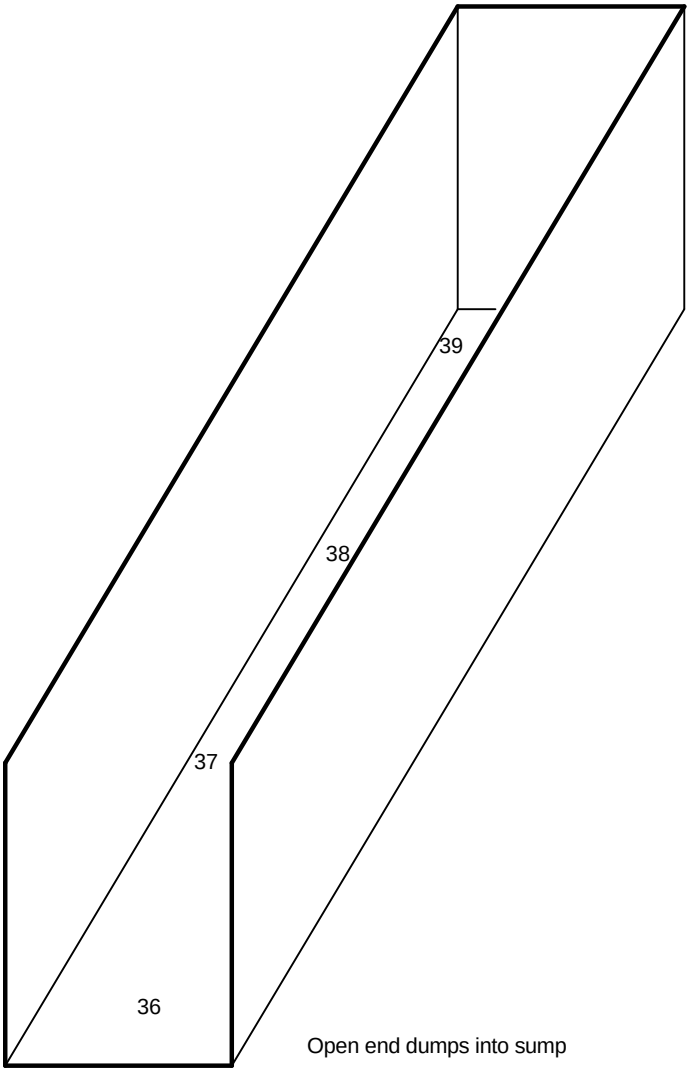
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 10 **Survey Unit:** Scavenger Spirals Feed Sump-Direct feed launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
36	5	< MDA	17	75
37	6	< MDA	13	55
38	6	< MDA	17	75
39	7	< MDA	14	60

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals

Notes: Unaffected.
Locations 1 thru 10 are inside the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	9	< MDA
2	3	< MDA	13	< MDA
3	8	< MDA	6	< MDA
4	5	< MDA	9	< MDA
5	5	< MDA	12	< MDA
6	3	< MDA	14	< MDA
7	3	< MDA	7	< MDA
8	6	< MDA	8	< MDA
9	1	< MDA	9	< MDA
10	8	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/9/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/9/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals

Notes: Unaffected.
Locations 11 thru 15 are inside the spiral.
Locations 16 thru 20 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	7	< MDA	12	< MDA
12	5	< MDA	5	< MDA
13	3	< MDA	16	< MDA
14	5	< MDA	13	< MDA
15	4	< MDA	11	< MDA
16	3	< MDA	3	< MDA
17	3	< MDA	5	< MDA
18	3	< MDA	7	< MDA
19	6	< MDA	3	< MDA
20	0	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/9/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/9/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals

Notes: Unaffected.
Locations 21 thru 30 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	3	< MDA	4	< MDA
22	5	< MDA	9	< MDA
23	8	< MDA	8	< MDA
24	2	< MDA	14	< MDA
25	0	< MDA	13	< MDA
26	6	< MDA	6	< MDA
27	4	< MDA	8	< MDA
28	3	< MDA	9	< MDA
29	4	< MDA	3	< MDA
30	4	< MDA	8	< MDA

Smear Info

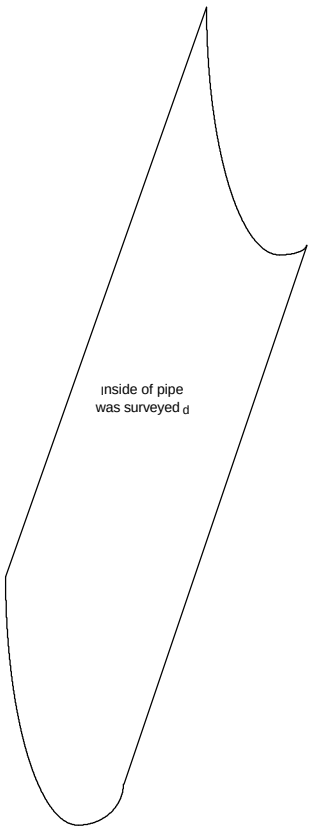
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/9/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 7/9/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals Feed Sump-Pipes

Notes: Unaffected. 10' sections. Interior of pipes surveyed.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	4	< MDA	5	< MDA
32	0	< MDA	3	< MDA
33	1	< MDA	3	< MDA
34	2	< MDA	8	< MDA
35	0	< MDA	8	< MDA
36	1	< MDA	2	< MDA
37	1	< MDA	3	< MDA
38	4	< MDA	4	< MDA
39	1	< MDA	5	< MDA
40	2	< MDA	13	55

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals Feed Sump-Launders

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
41	4	< MDA	7	< MDA
42	6	< MDA	27	125

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 11 **Survey Unit:** Scavenger Spirals Feed Sump-Launders

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
43	2	< MDA	7	< MDA
44	3	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

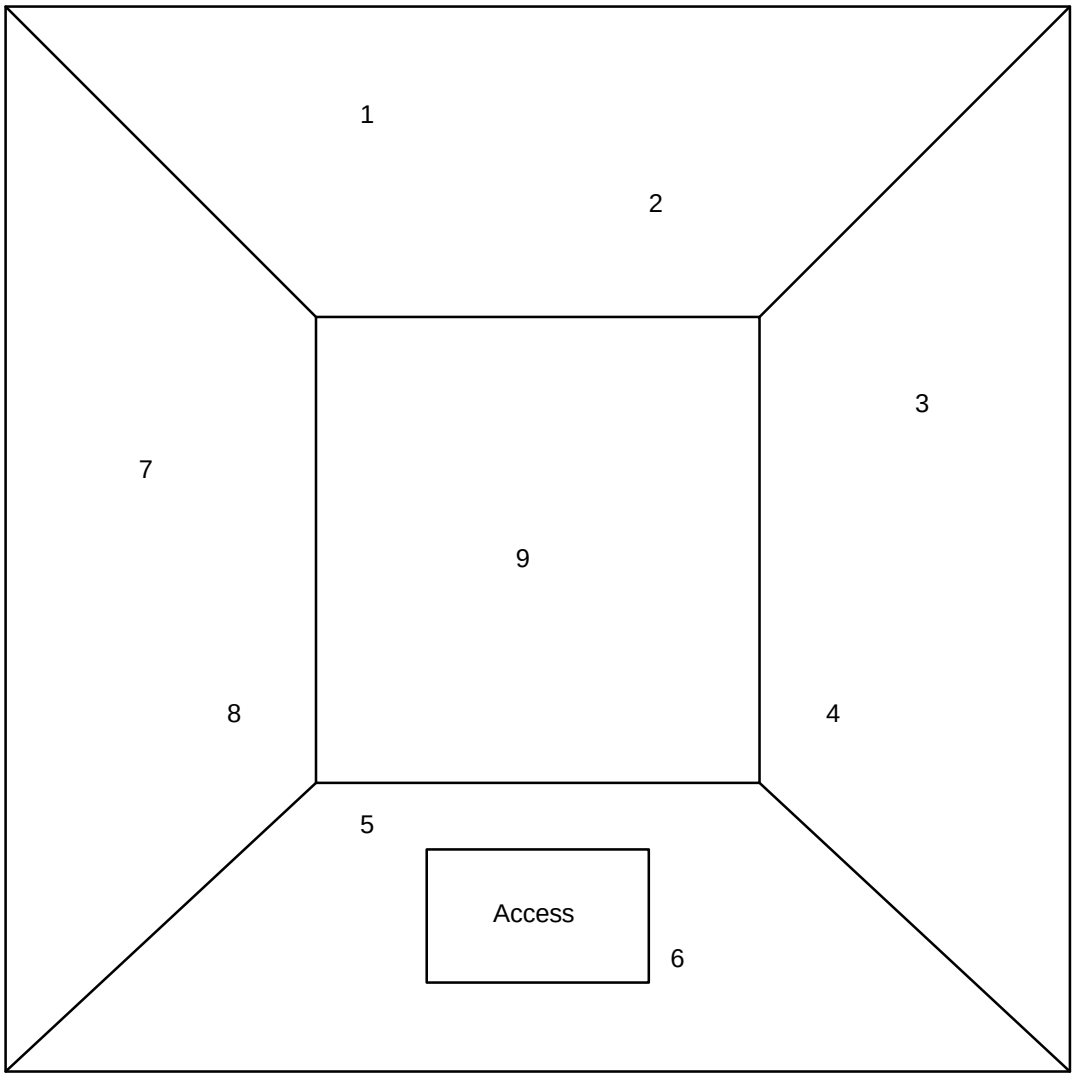
Serial Number: 134488

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 12 **Survey Unit:** Tails Transfer Sump-interior

Notes: Unaffecetd.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	17	75
2	5	< MDA	20	90
3	10	< MDA	28	130
4	3	< MDA	20	90
5	1	< MDA	18	80
6	4	< MDA	9	< MDA
7	2	< MDA	22	100
8	1	< MDA	13	55
9	5	< MDA	35	165

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

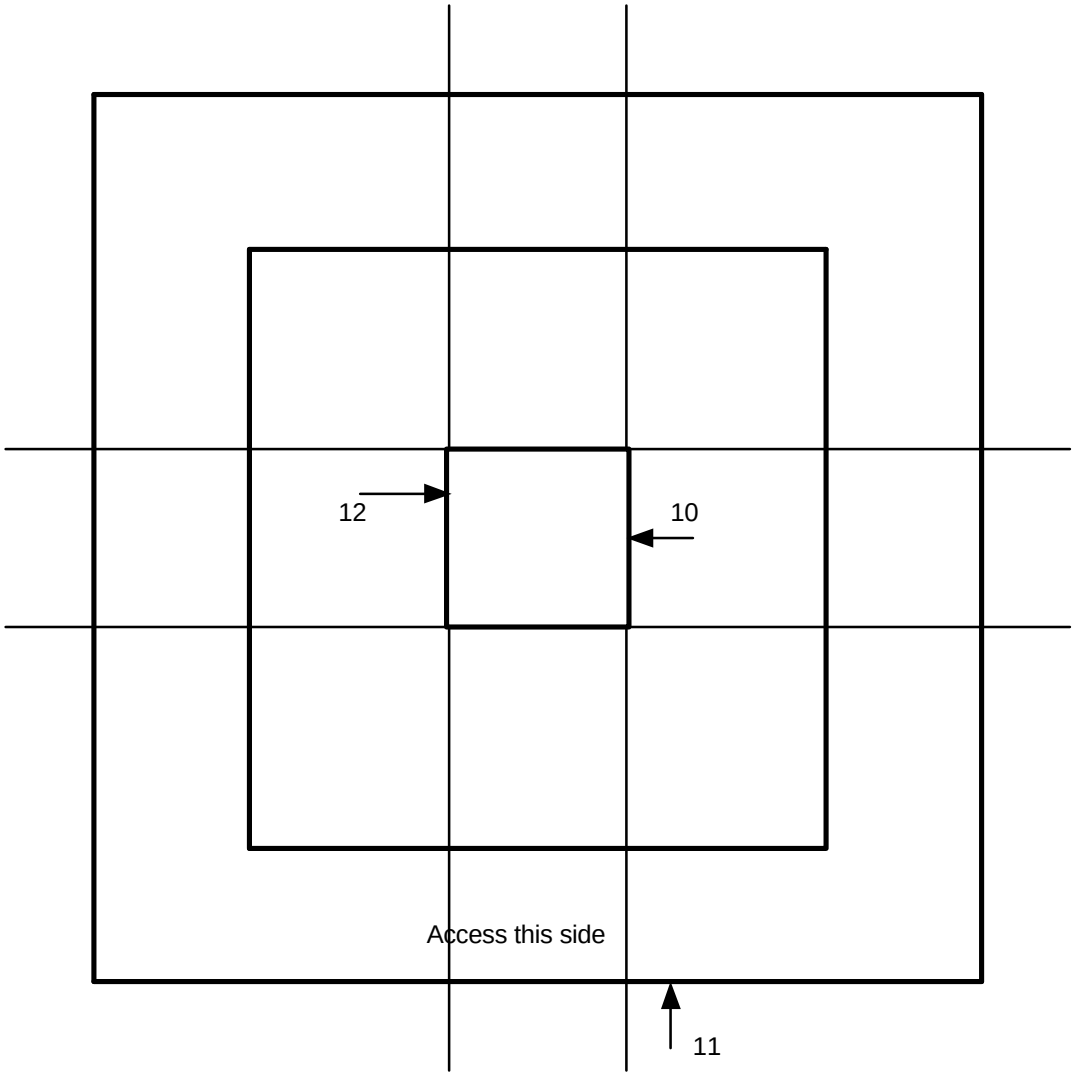
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 12 **Survey Unit:** Tails Transfer Sump-overhead frame

Notes: Unaffecetd.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
10	2	< MDA	7	< MDA
11	3	< MDA	5	< MDA
12	1	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 12 **Survey Unit:** Front and right side

Notes: Unaffecetd.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	3	< MDA	2	< MDA
14	0	< MDA	15	< MDA
15	2	< MDA	16	< MDA
16	0	< MDA	4	< MDA
17	6	< MDA	32	130
18	4	< MDA	3	< MDA
19	2	< MDA		
28	2	< MDA	17	< MDA
29	4	< MDA	16	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 12 **Survey Unit:** Left side and rear.

Notes: Unaffecetd.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
20	1	< MDA	1	< MDA
21	4	< MDA	18	< MDA
22	3	< MDA	7	< MDA
23	3	< MDA	7	< MDA
24	3	< MDA	14	< MDA
25	4	< MDA	31	125
26	2	< MDA	60	270
27	2	< MDA	41	175

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

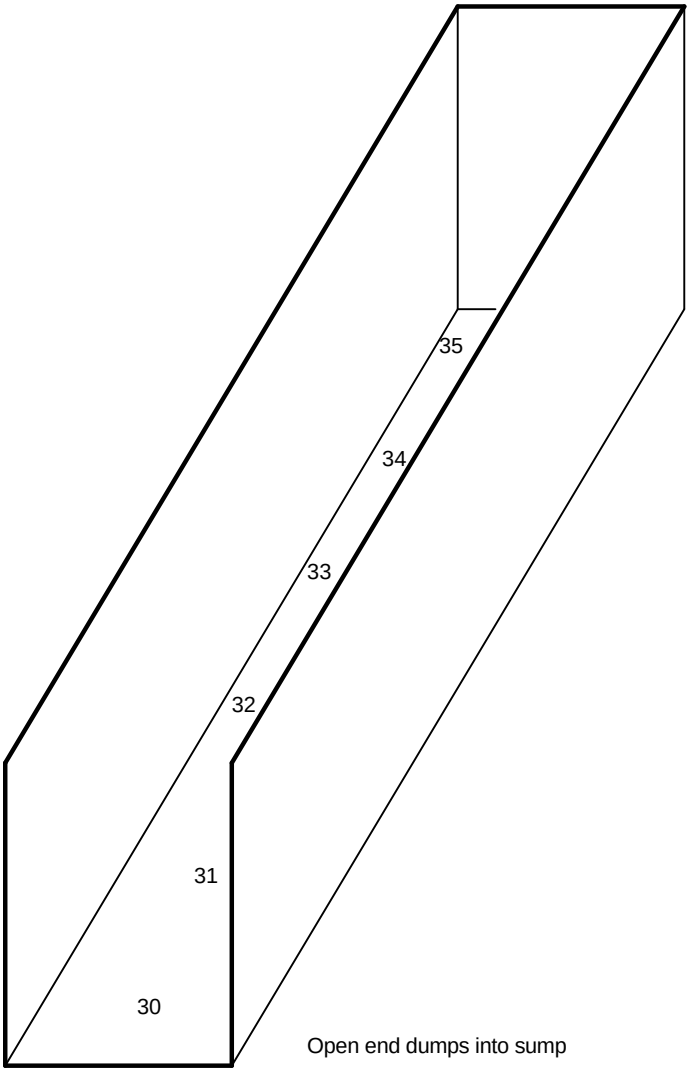
Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 12 **Survey Unit:** Tails Transfer Sump-Direct feed launder

Notes: Unaffecetd.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
30	5	< MDA	31	145
31	6	< MDA	21	95
32	7	< MDA	21	95
33	7	< MDA	17	75
34	8	< MDA	27	125
35	6	< MDA	25	115

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

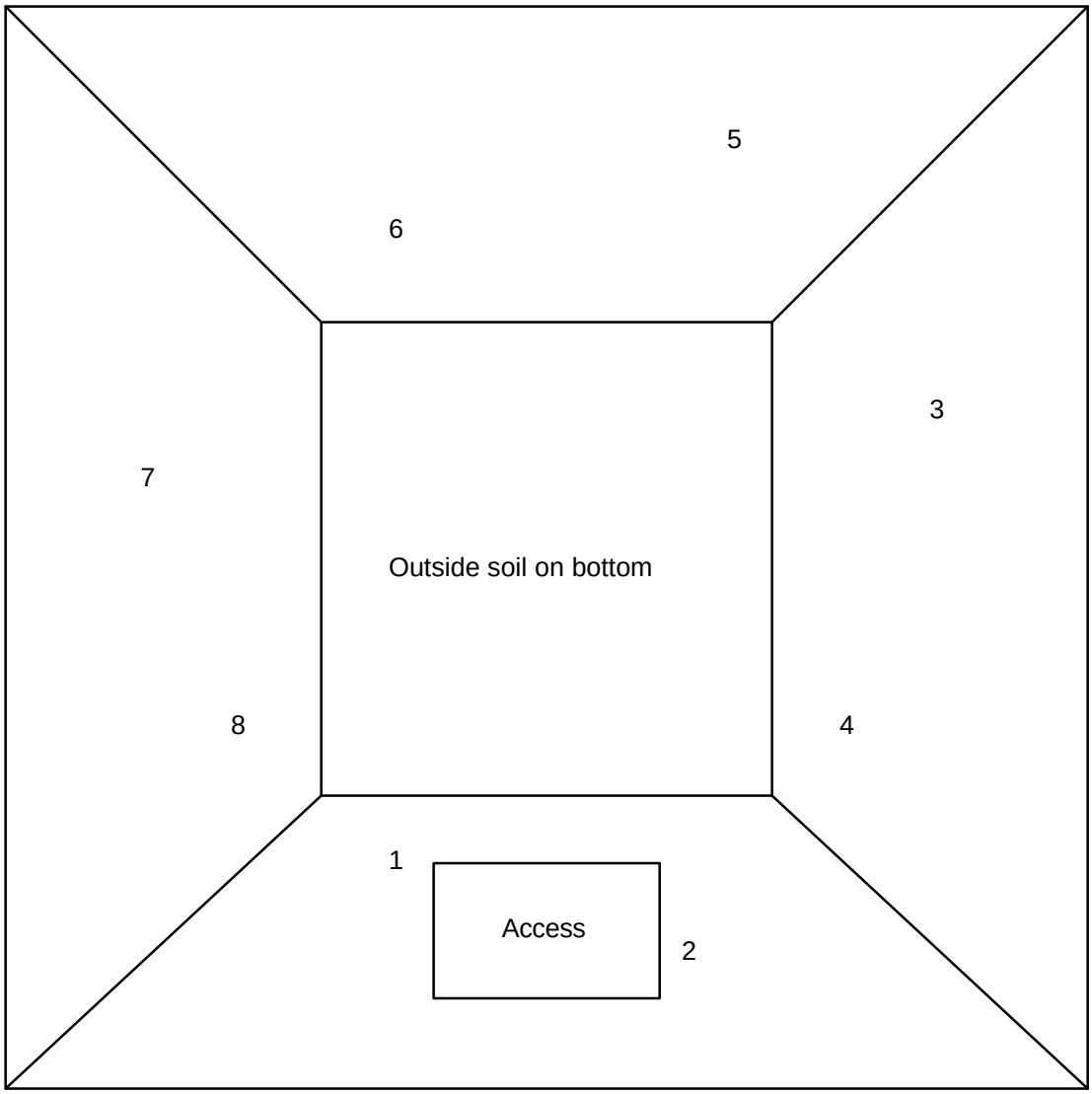
Serial Number: 134488

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 13 **Survey Unit:** Thickener Sump Sump, front two sides

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	7	< MDA	41	195
2	8	< MDA	23	105
3	1	< MDA	17	75
4	4	< MDA	46	220
5	3	< MDA	17	75
6	3	< MDA	22	100
7	3	< MDA	47	225
8	4	< MDA	26	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

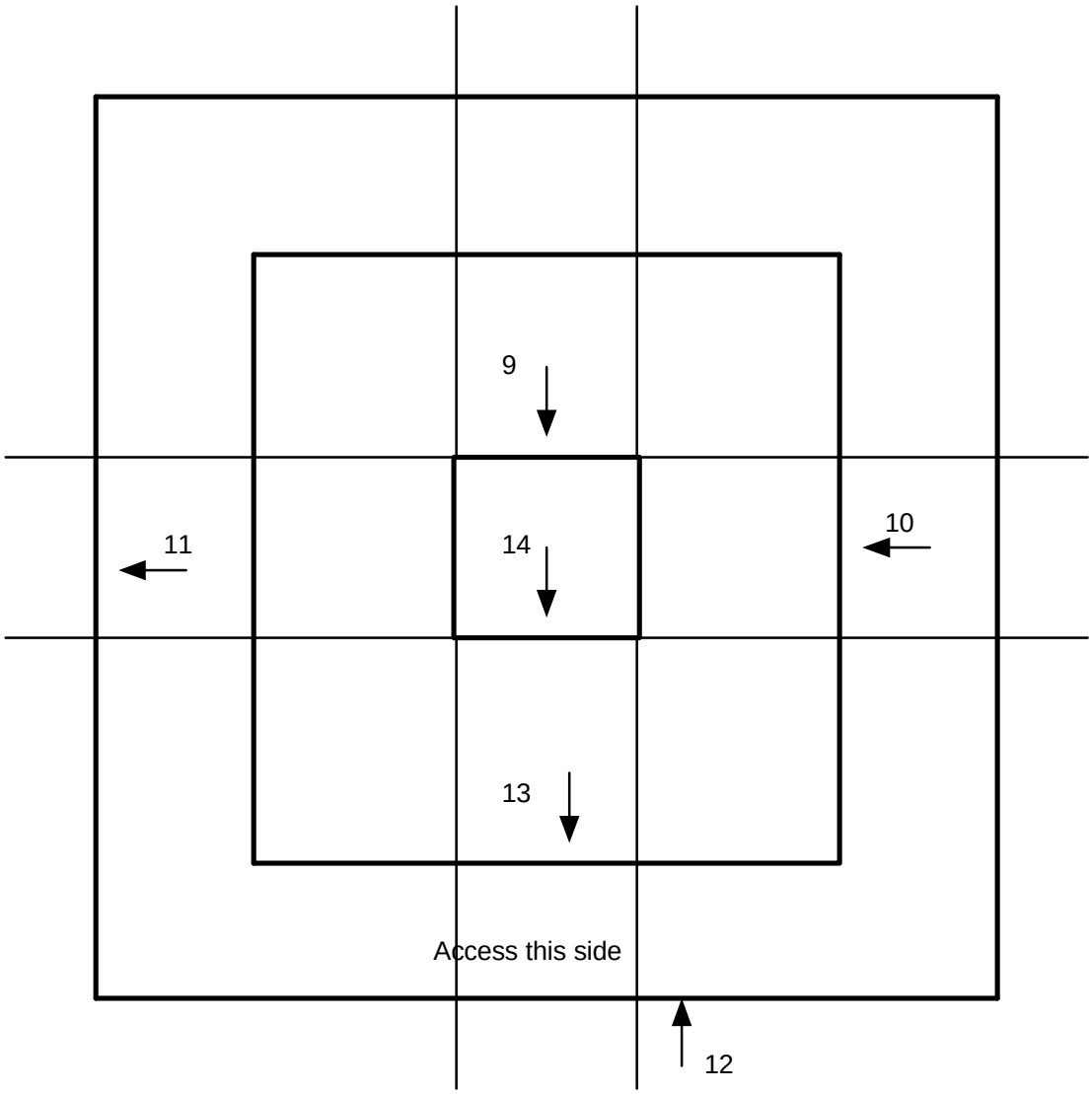
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 13 **Survey Unit:** Thickener Sump Sump, frames

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	1	< MDA	4	< MDA
10	1	< MDA	4	< MDA
11	4	< MDA	3	< MDA
12	1	< MDA	7	< MDA
13	2	< MDA	5	< MDA
14	4	< MDA	36	170

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

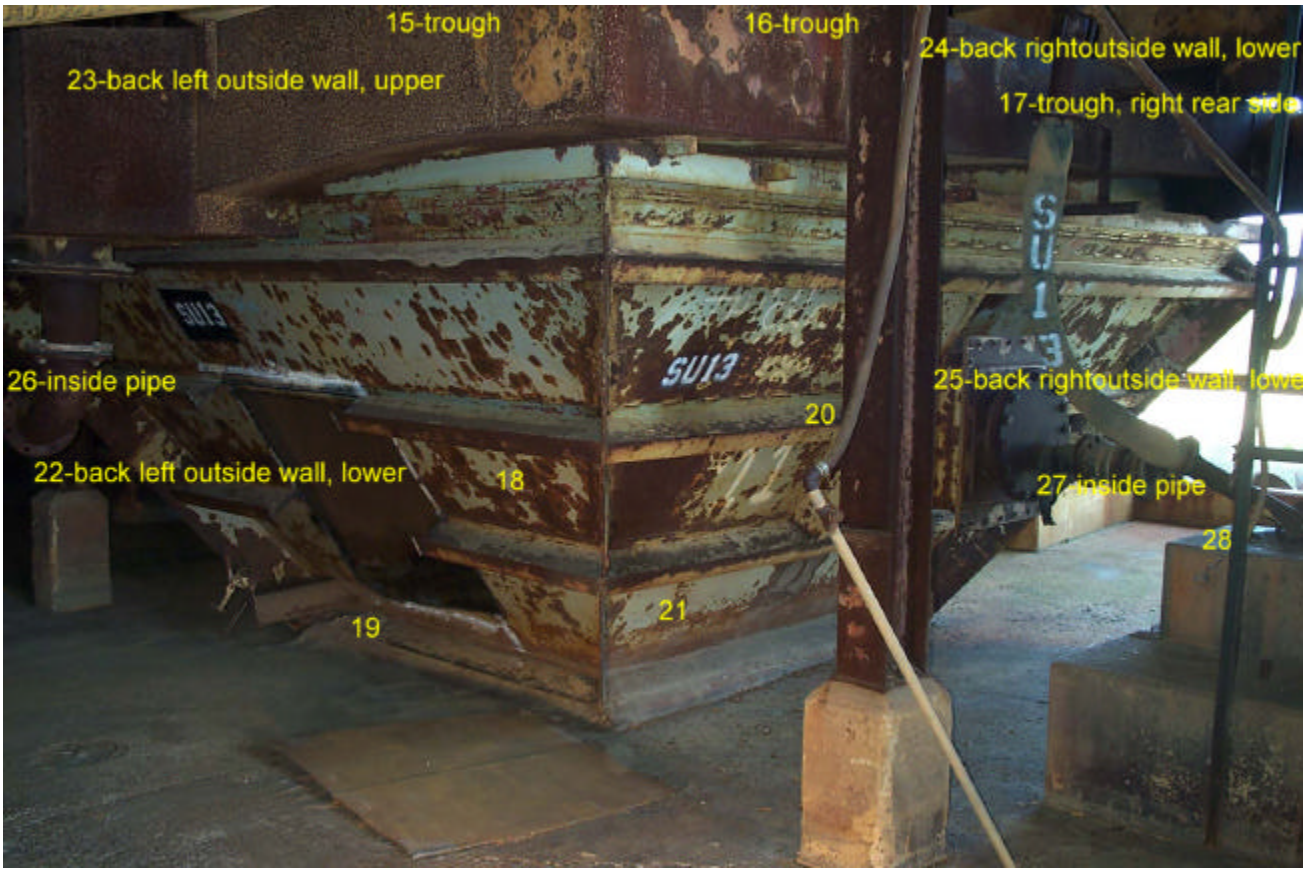
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 13 **Survey Unit:** Thickener Sump Sump, front two sides

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	5	< MDA	59	265
16	5	< MDA	10	< MDA
17	1	< MDA	16	< MDA
18	4	< MDA	3	< MDA
19	5	< MDA	23	85
20	1	< MDA	3	< MDA
21	3	< MDA	24	90
22	3	< MDA	10	< MDA
23	2	< MDA	7	< MDA
24	2	< MDA	21	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

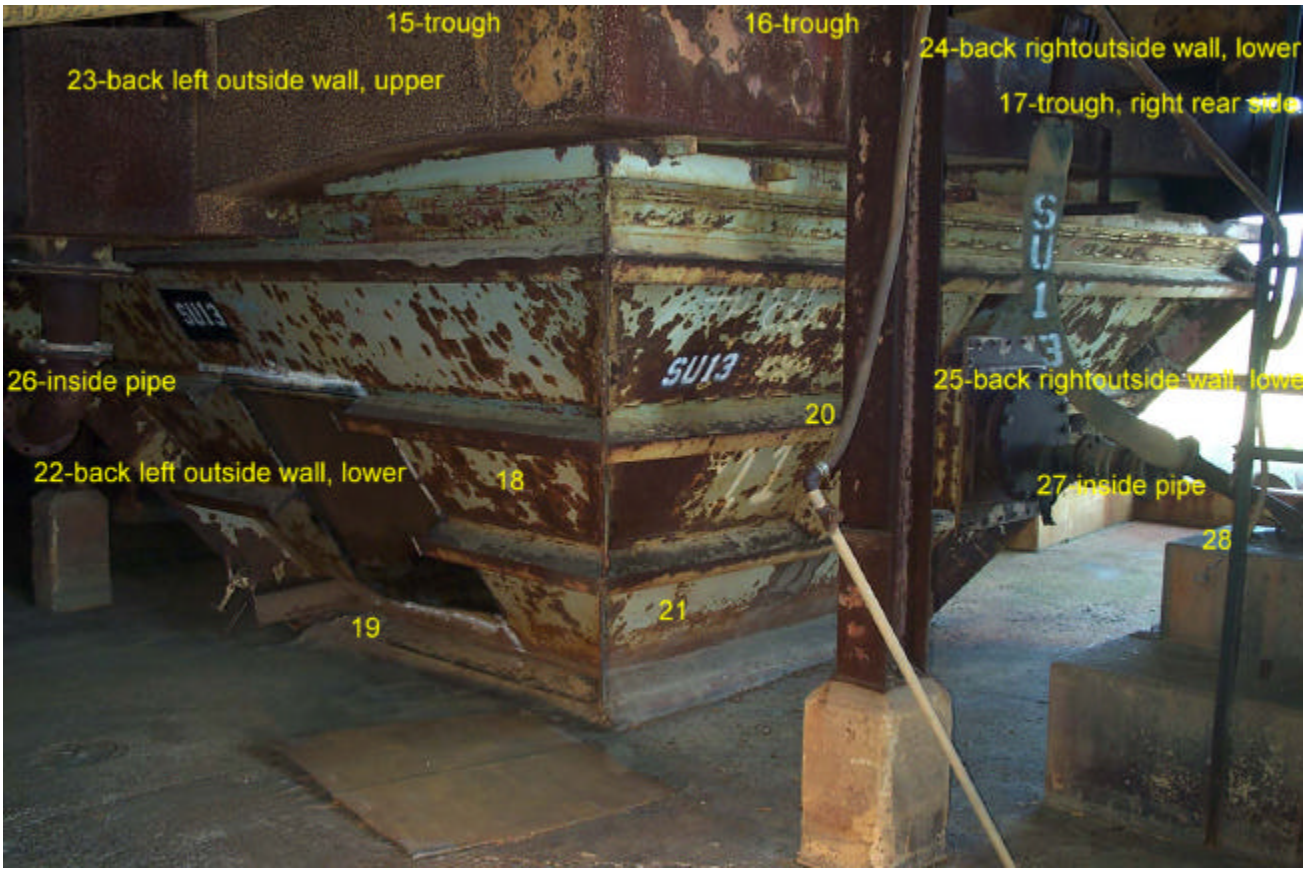
Serial Number: 134488

Survey date: 8/16/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 13 **Survey Unit:** Thickener Sump Sump, front two sides

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
25	1	< MDA	22	80
26	2	< MDA	6	< MDA
27	2	< MDA		
28	1	< MDA	31	125

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

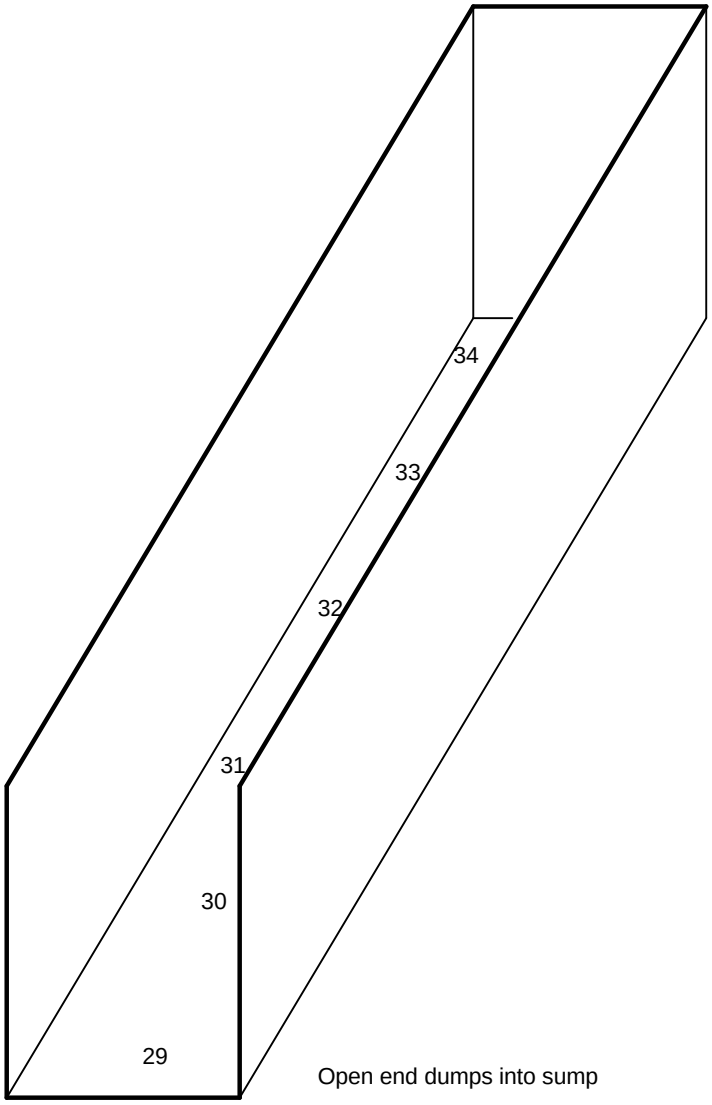
Serial Number: 134488

Survey date: 8/16/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 13 **Survey Unit:** Thickener Sump Sump, front two sides

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
29	0	< MDA	28	135
30	2	< MDA	16	75
31	2	< MDA	26	125
32	0	< MDA	15	70
33	3	< MDA	71	350
34	3	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/27/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals

Notes: Unaffected.
1 thru 10 taken inside spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	27	115
2	4	< MDA	22	90
3	5	< MDA	16	< MDA
4	8	< MDA	23	95
5	4	< MDA	15	< MDA
6	1	< MDA	9	< MDA
7	2	< MDA	16	< MDA
8	6	< MDA	21	85
9	2	< MDA	4	< MDA
10	4	< MDA	10	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals

Notes: Unaffected.
11 thru 15 taken on outside of spiral.
16 thru 20 taken inside spiral

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	6	< MDA	9	< MDA
12	4	< MDA	3	< MDA
13	2	< MDA	14	< MDA
14	4	< MDA	13	< MDA
15	4	< MDA	11	< MDA
16	1	< MDA	4	< MDA
17	4	< MDA	29	125
18	1	< MDA	41	185
19	1	< MDA	21	85
20	4	< MDA	24	100

Smear Info

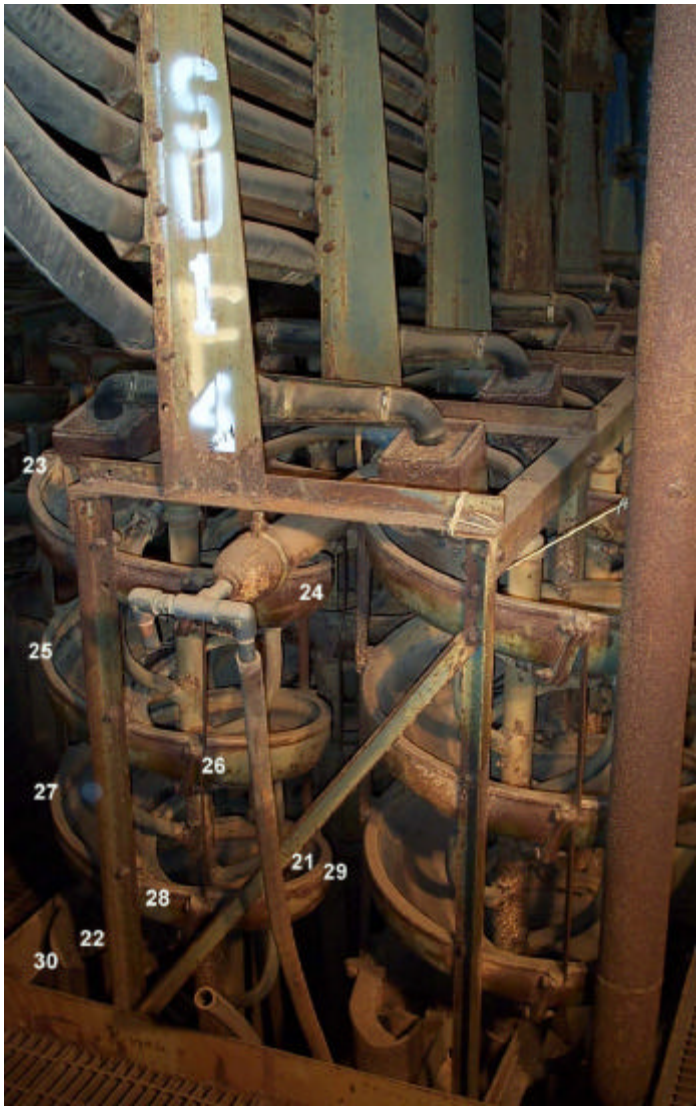
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals

Notes: Unaffected.
21 thru 30 taken on outside of spiral.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	4	< MDA	22	90
22	7	< MDA	12	< MDA
23	4	< MDA	9	< MDA
24	6	< MDA	6	< MDA
25	4	< MDA	13	< MDA
26	3	< MDA	3	< MDA
27	2	< MDA	10	< MDA
28	5	< MDA	11	< MDA
29	0	< MDA	14	< MDA
30	4	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 60 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals-Launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	1	< MDA	14	< MDA
32	4	< MDA	15	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals-Launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	3	< MDA	13	< MDA
34	3	< MDA	14	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

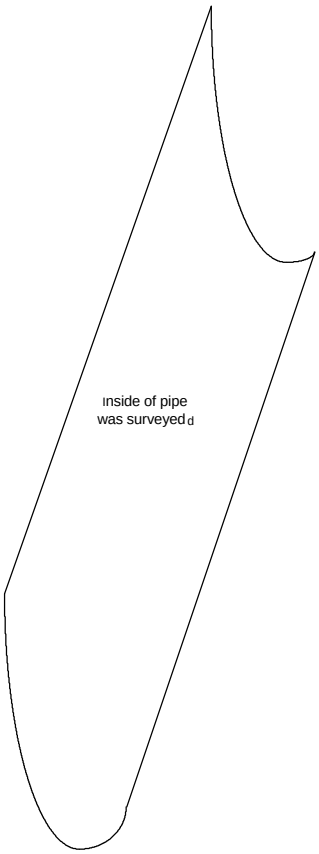
Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 14 **Survey Unit:** Finisher Spirals-Pipes into launders

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
35	3	< MDA	13	< MDA
36	3	< MDA	14	< MDA
37				
38				
39				
40				
41				
42				
43				
44				

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

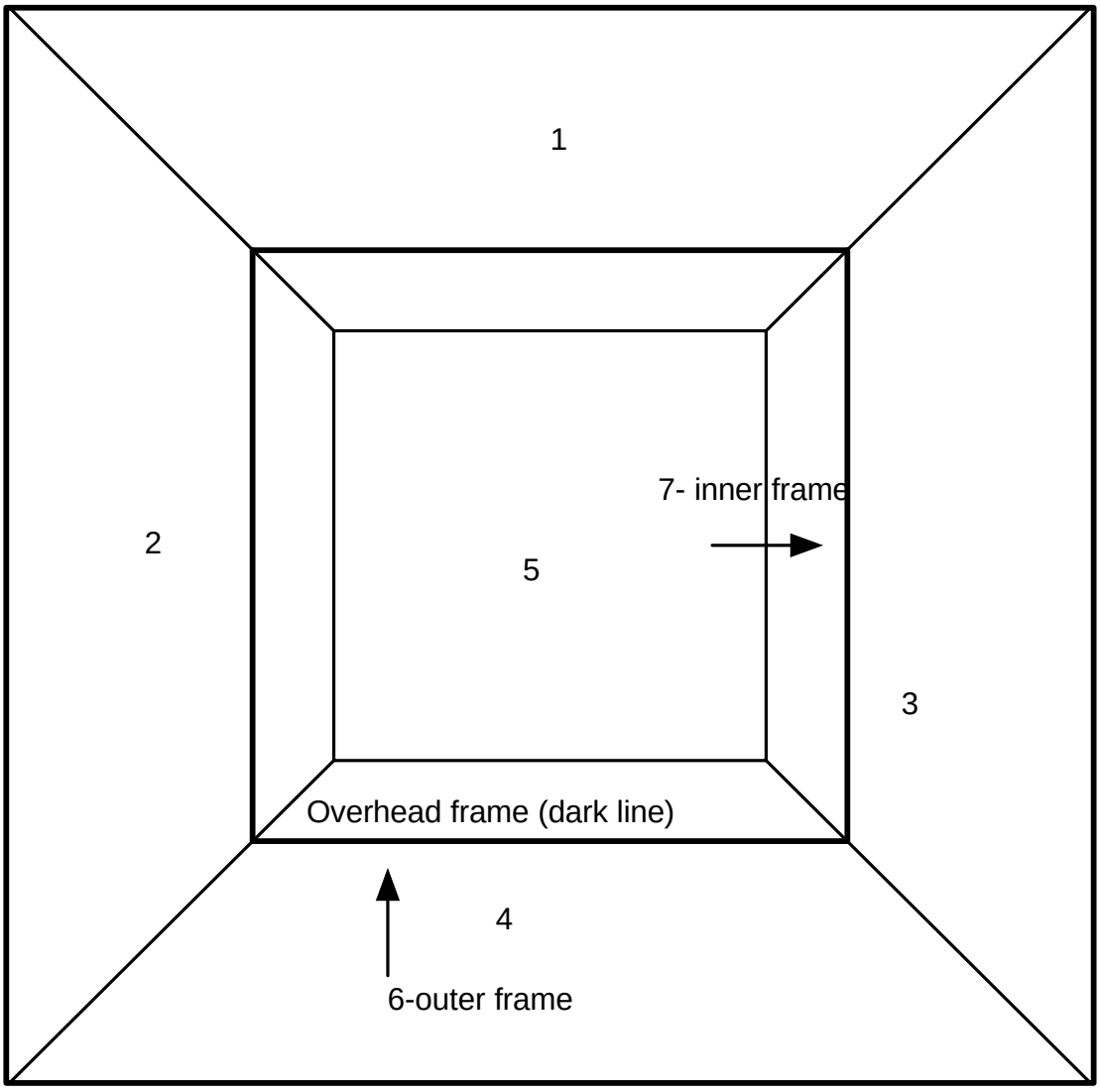
Serial Number: 161133

Survey date: 9/27/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 15 **Survey Unit:** Table Spirals Feed Sump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	6	< MDA	23	105
2	7	< MDA	68	330
3	5	< MDA	26	120
4	2	< MDA	20	90
5	9	< MDA	32	150
6	1	< MDA	59	285
7	1	< MDA	12	50

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 15 **Survey Unit:** Table Spirals Feed Sump

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	1	< MDA	9	40
9	3	< MDA	43	210

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 15 **Survey Unit:** Table Spirals Feed Sump

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
10	1	< MDA	29	140
11	2	< MDA	44	215

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

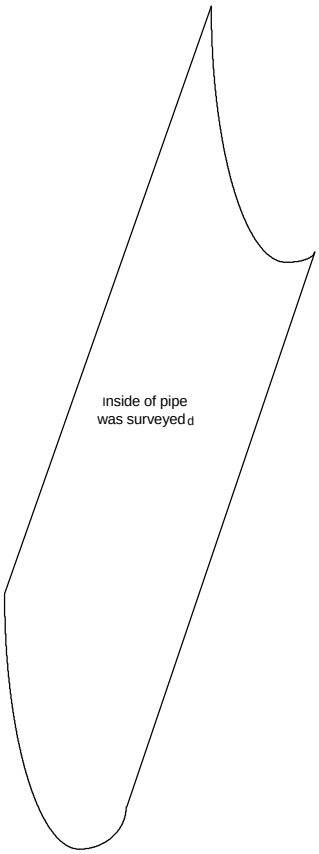
Serial Number: 134488

Survey date: 7/10/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 15 **Survey Unit:** Table Spirals Feed Sump-Pipes

Notes: Unaffected. All sections 10' long.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	1	< MDA	8	< MDA
13	2	< MDA	2	< MDA
14	1	< MDA	1	< MDA
15	0	< MDA	3	< MDA
16	2	< MDA	7	< MDA
17	2	< MDA	11	< MDA
18	1	< MDA	21	95
19	2	< MDA	7	< MDA
20	1	< MDA	3	< MDA
21	3	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

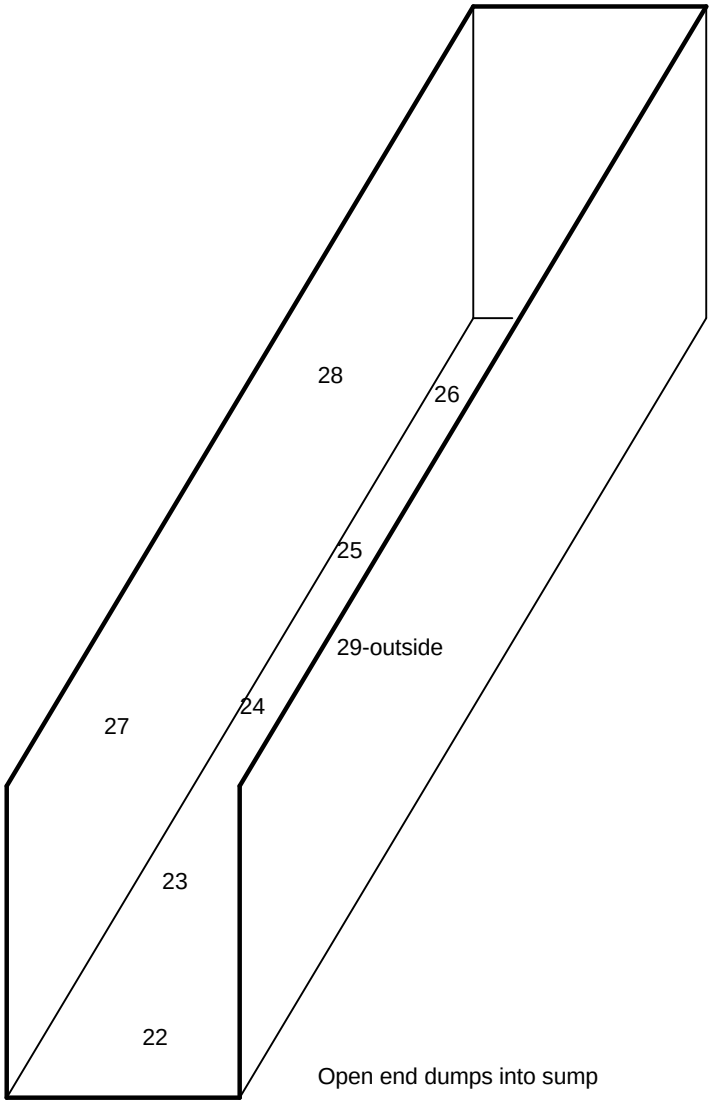
Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 15 **Survey Unit:** Table Spirals Feed Sump-Direct feed launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
22	1	< MDA	8	< MDA
23	2	< MDA	2	< MDA
24	1	< MDA	1	< MDA
25	0	< MDA	3	< MDA
26	2	< MDA	7	< MDA
27	2	< MDA	11	< MDA
28	1	< MDA	21	95
29	2	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals

Notes: Unaffected.
All data taken on inside of spirals.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	19	80
2	4	< MDA	12	< MDA
3	3	< MDA	18	75
4	1	< MDA	11	< MDA
5	5	< MDA	17	70
6	2	< MDA	27	120
7	1	< MDA	16	65
8	3	< MDA	11	< MDA
9	12	< MDA	14	55
10	5	< MDA	17	70

Smear Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals

Notes: Unaffected.
Data for location 11 taken on inside of spirals.
All other data taken on outside of spirals.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	4	< MDA	22	95
12	1	< MDA	7	< MDA
13	4	< MDA	22	95
14	1	< MDA	11	< MDA
15	3	< MDA	15	60
16	0	< MDA	20	85
17	0	< MDA	12	< MDA
18	2	< MDA	7	< MDA
19	7	< MDA	12	< MDA
20	2	< MDA	38	175

Smear Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals

Notes: Unaffected.
Data at locations 21 and 22 taken on outside of spirals.
All data taken on inside of spirals.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	25	110
22	2	< MDA	4	< MDA
23	4	< MDA	23	100
24	4	< MDA	21	90
25	3	< MDA	19	80
26	4	< MDA	18	75
27	2	< MDA	17	70
28	3	< MDA	23	100
29	8	< MDA	12	< MDA
30	3	< MDA	18	75

Smear Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals

Notes: Unaffected.
Data for locations 31, 32, and 33 taken on inside of spirals.
All other data taken on outside of spirals.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	1	< MDA	20	85
32	3	< MDA	17	70
33	0	< MDA	21	90
34	2	< MDA	12	< MDA
35	2	< MDA	7	< MDA
36	2	< MDA	6	< MDA
37	2	< MDA	12	< MDA
38	2	< MDA	6	< MDA
39	4	< MDA	17	70
40	1	< MDA	8	< MDA

Smear Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals

Notes: Unaffected.
All data taken on outside of spirals.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
41	0	< MDA	7	< MDA
42	4	< MDA	5	< MDA
43	3	< MDA	21	90
44	2	< MDA	7	< MDA

Smear Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter:

Serial Number:

Survey date:

MDA = 54 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals-Launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
45	5	< MDA	23	105
46	4	< MDA	18	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals-Launders beneath spirals

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
47	6	< MDA	22	100
48	6	< MDA	16	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

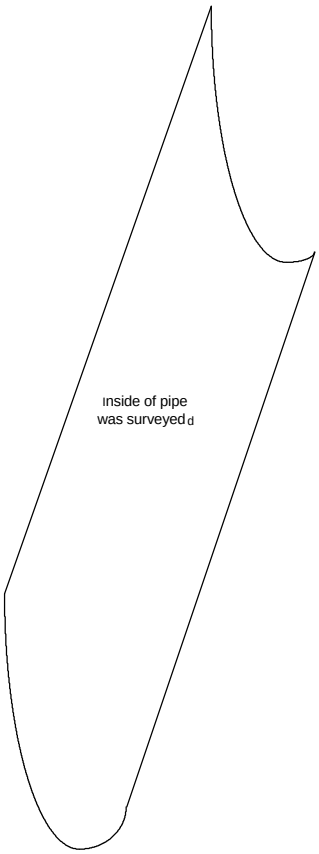
Serial Number: 161133

Survey date: 9/27/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 16 **Survey Unit:** Table Spirals-Pipes into launders

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
49	3	< MDA	13	55
50	4	< MDA	14	60
51	4	< MDA	12	50
52	3	< MDA	15	65
53	5	< MDA	13	55
54	4	< MDA	11	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

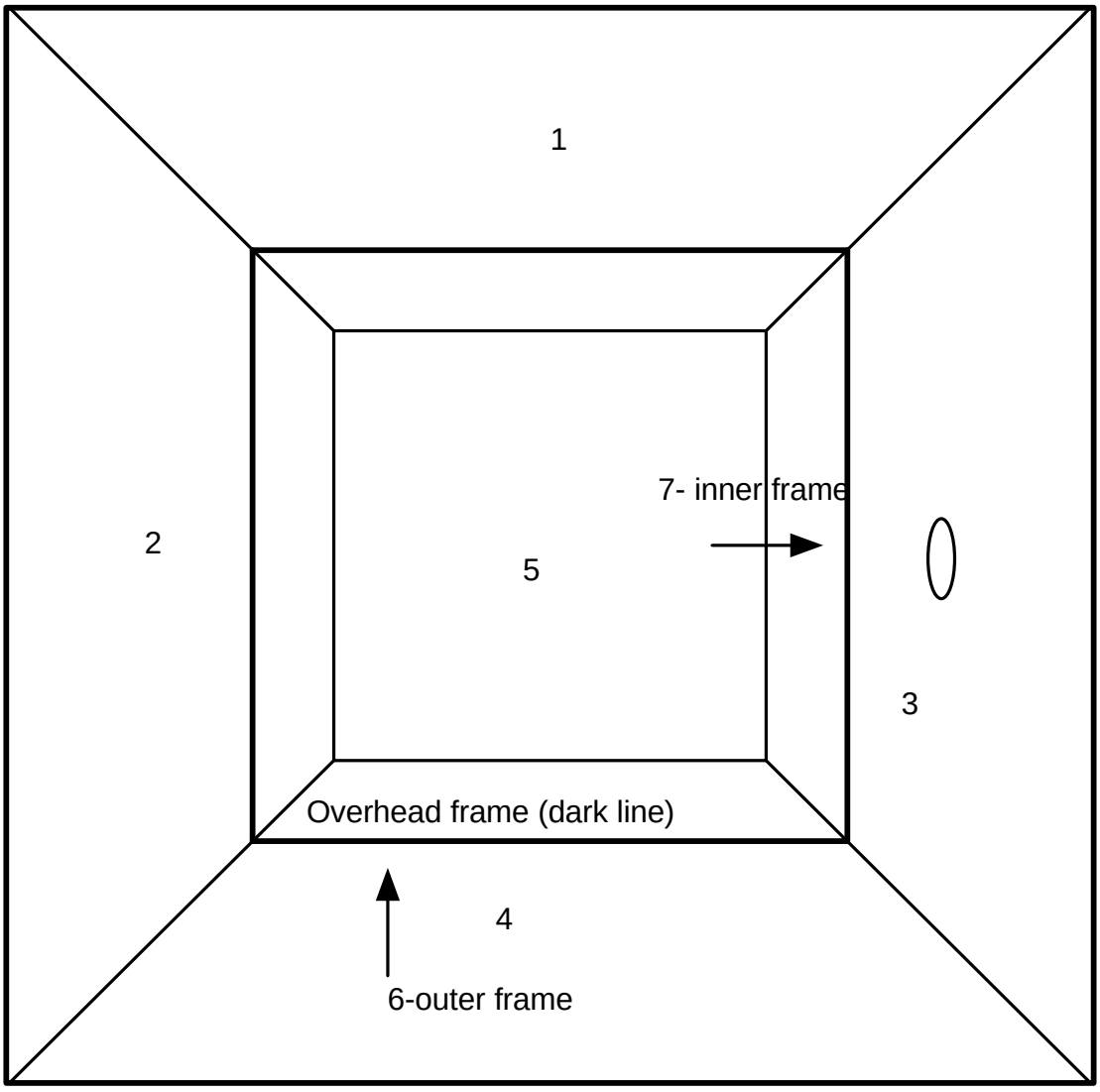
Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 17 **Survey Unit:** Table Feed Sump, interior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	7	< MDA	23	105
2	6	< MDA	25	115
3	6	< MDA	17	75
4	8	< MDA	22	100
5	9	< MDA	44	210
6	5	< MDA	8	< MDA
7	6	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 17 **Survey Unit:** Table Feed Sump, exterior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	5	< MDA	18	80
9	7	< MDA	16	70
10	6	< MDA	16	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 17 **Survey Unit:** Table Feed Sump, exterior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	8	< MDA	11	< MDA
12	6	< MDA	13	55

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 17 **Survey Unit:** Table Feed Sump, pump

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	7	< MDA	33	155
14	7	< MDA	24	110
15	9	< MDA	17	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

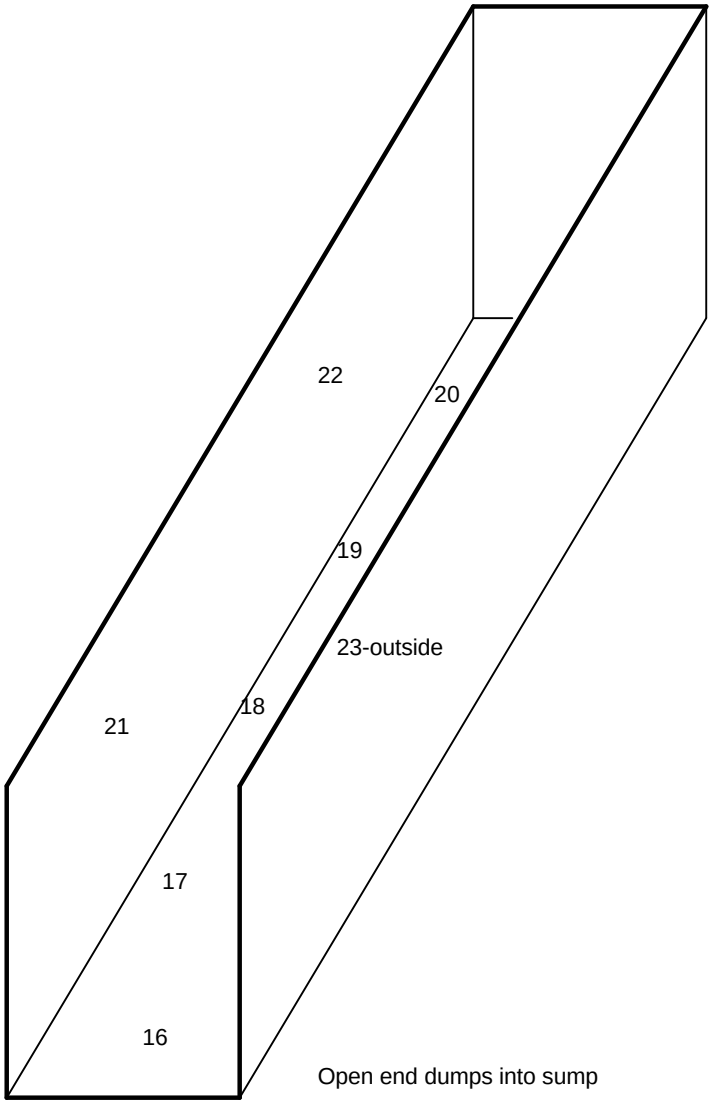
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 17 **Survey Unit:** Table Feed Sump, direct feed launder

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
16	1	< MDA	29	135
17	2	< MDA	26	120
18	3	< MDA	25	115
19	3	< MDA	24	110
20	5	< MDA	28	130
21	3	< MDA	14	60
22	6	< MDA	14	60
23	4	< MDA	19	85

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

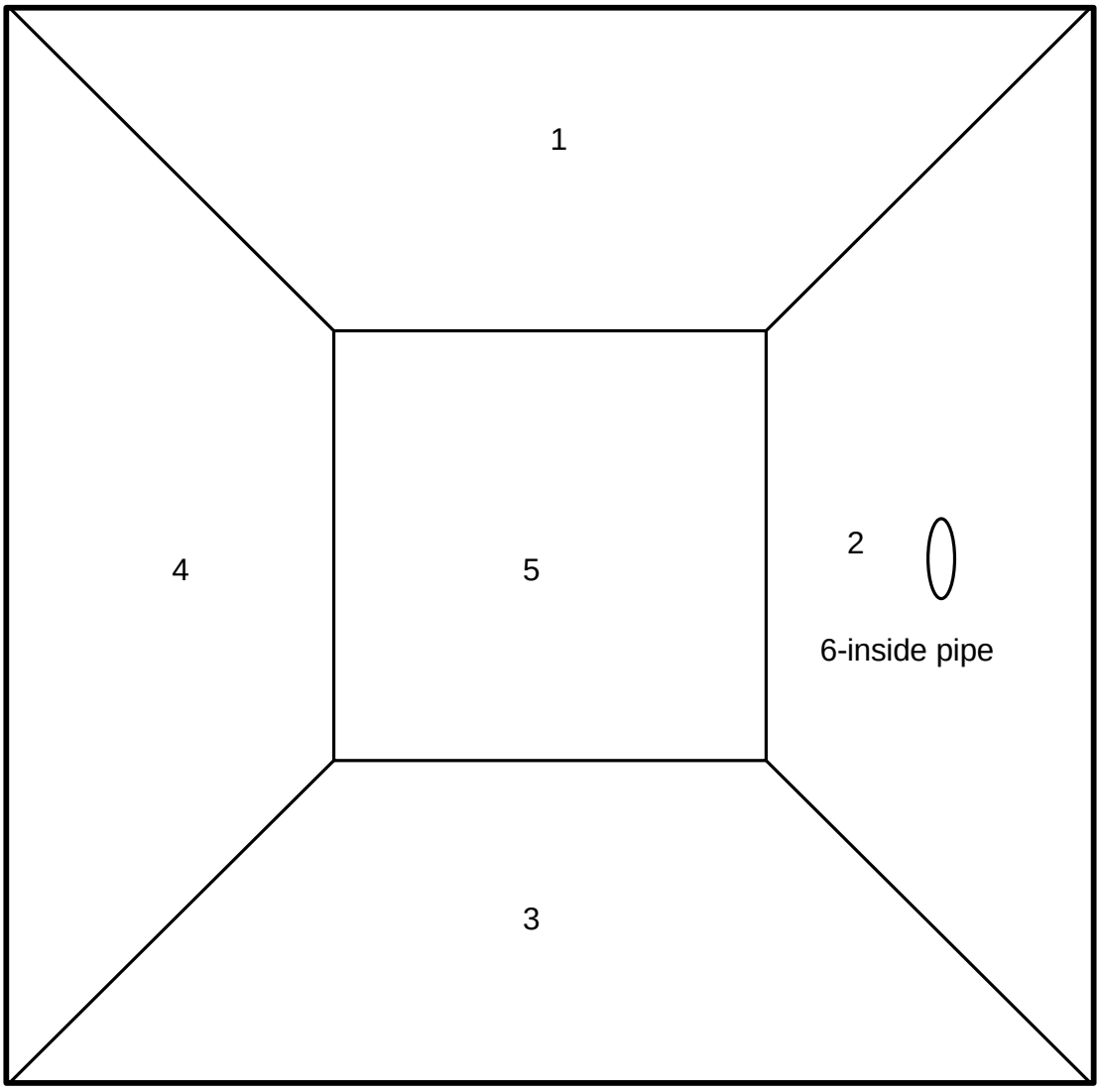
Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 18 **Survey Unit:** Screw Feed Sump, interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	60	< MDA
2	8	< MDA	111	< MDA
3	5	< MDA	16	< MDA
4	5	< MDA	33	< MDA
5	7	< MDA	37	< MDA
6	2	< MDA	22	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = dpm/100 cm2

Survey Unit Number: 18 **Survey Unit:** Screw Feed Sump, exterior

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	5	< MDA	38	165
8	0	< MDA	31	130

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 18 **Survey Unit:** Screw Feed Sump, exterior

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	3	< MDA	30	125
10	6	< MDA	10	< MDA
11	6	< MDA	39	170

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

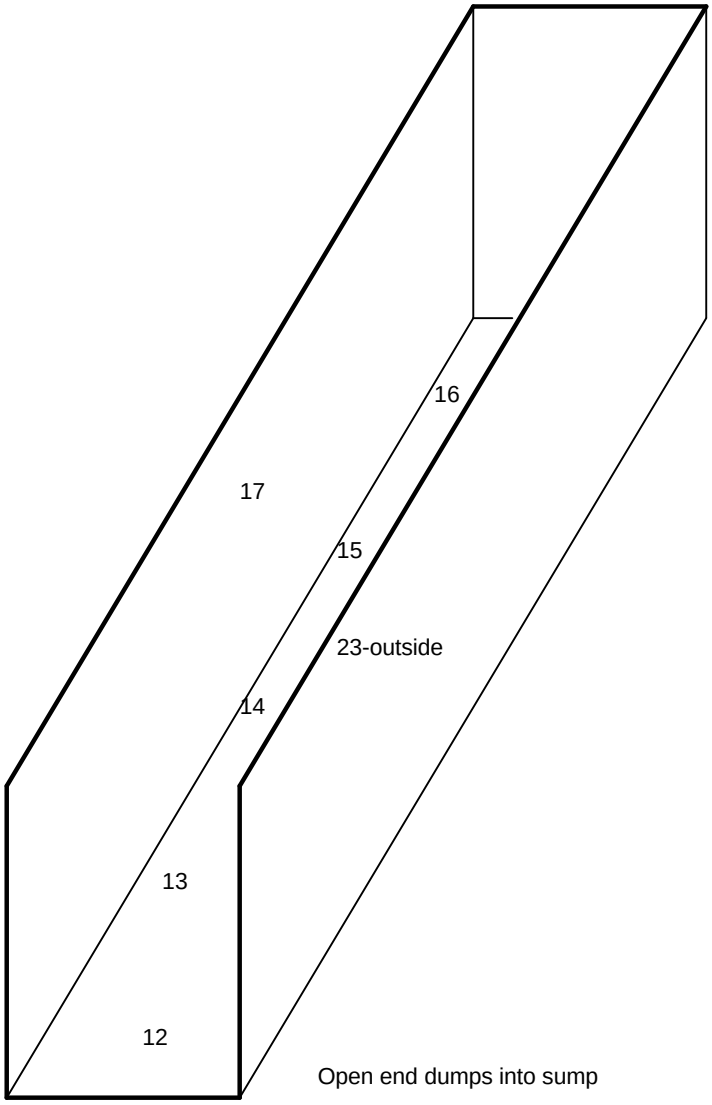
Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 18 **Survey Unit:** Screw Feed Sump, Direct feed launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	2	< MDA	8	< MDA
13	1	< MDA	20	< MDA
14	5	< MDA	86	400
15	2	< MDA	36	150
16	2	< MDA	45	195
17	5	< MDA	30	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/15/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-upper screw

Notes: Originally unaffecetd, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	6	< MDA	3	< MDA
2	3	< MDA	6	< MDA
3	6	< MDA	19	90
4	3	< MDA	3	< MDA
5	4	< MDA	5	< MDA
6	2	< MDA	4	< MDA
7	0	< MDA	3	< MDA
8	4	< MDA	2	< MDA
9	0	< MDA	2	< MDA
10	6	< MDA	27	130

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

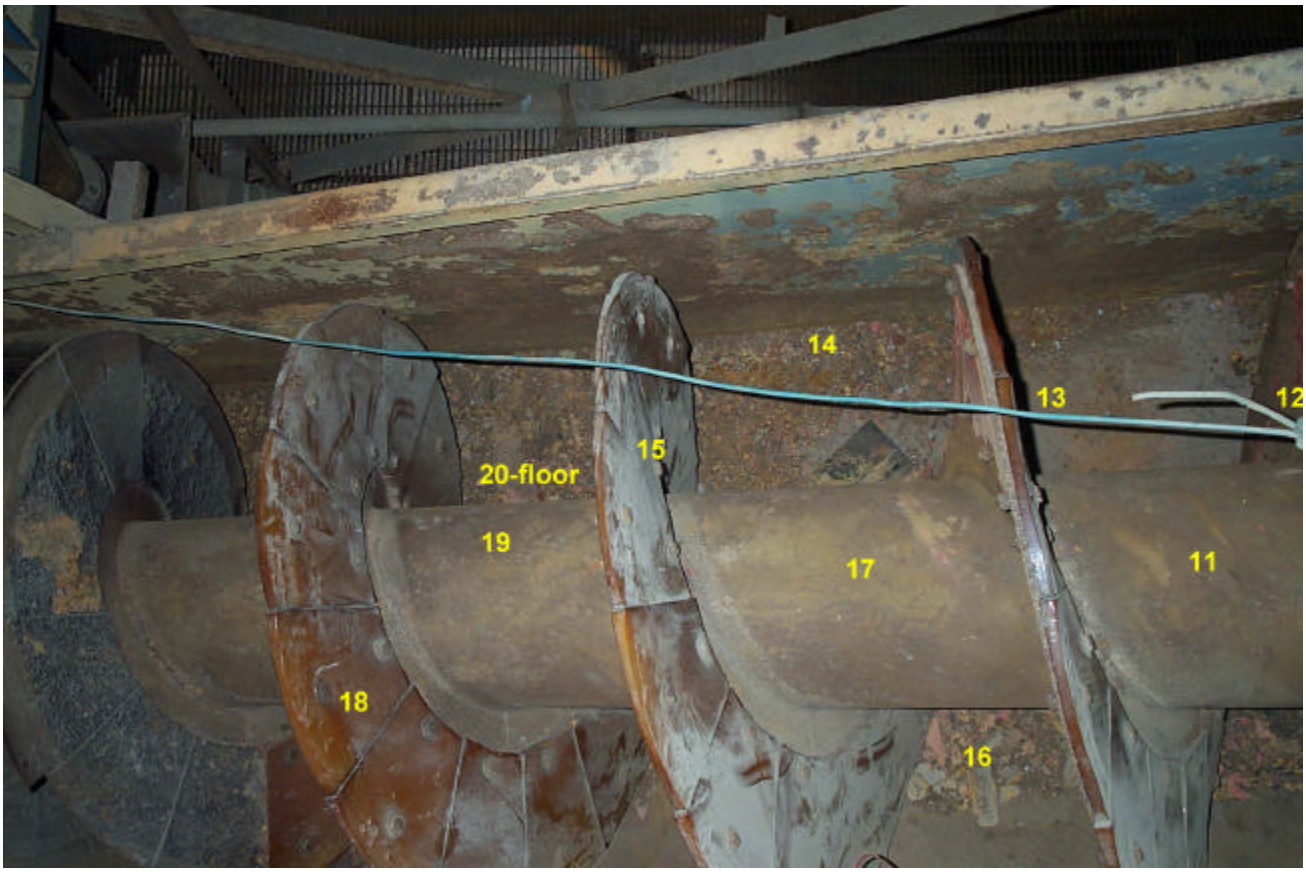
Serial Number: 134488

Survey date: 8/20/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-mid screw

Notes: Originally unaffecetd, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	5	< MDA	4	< MDA
12	3	< MDA	7	< MDA
13	1	< MDA	9	40
14	2	< MDA	13	60
15	5	< MDA	7	< MDA
16	1	< MDA	6	< MDA
17	1	< MDA	13	60
18	1	< MDA	8	< MDA
19	2	< MDA	7	< MDA
20	3	< MDA	25	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

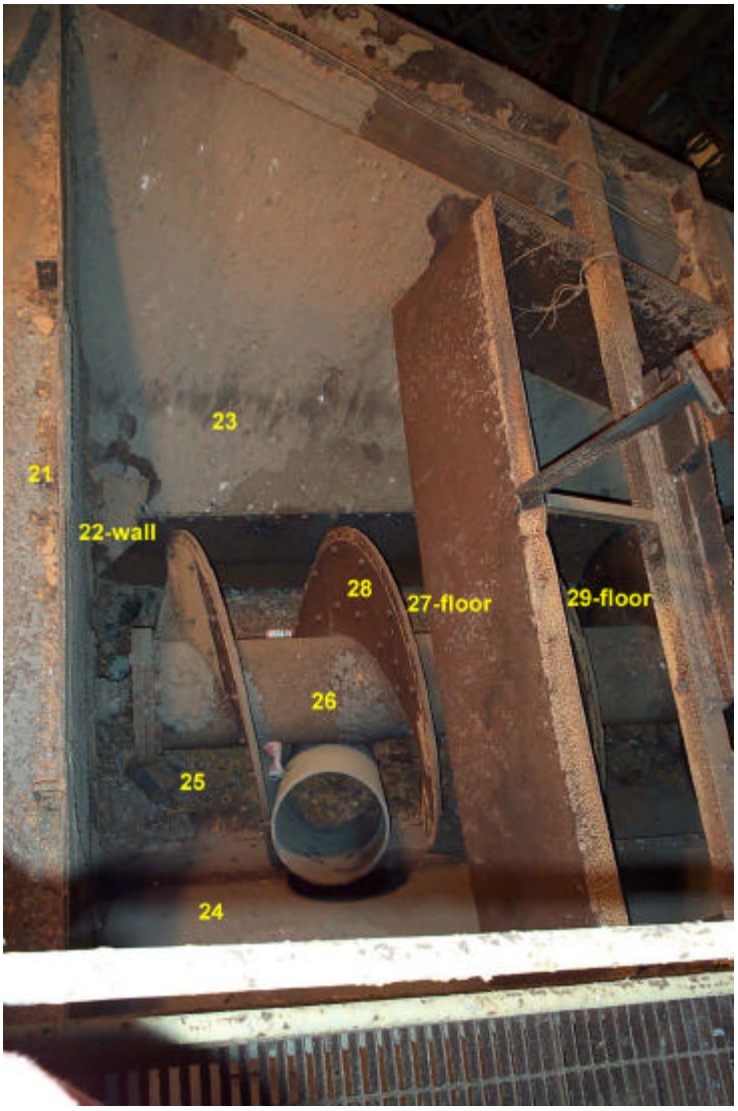
Serial Number: 134488

Survey date: 8/20/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-front screw area

Notes: Originally unaffecetd, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	3	< MDA	35	155
22	3	< MDA	62	290
23	7	< MDA	24	100
24	2	< MDA	32	140
25	3	< MDA	43	195
26	8	< MDA	21	85
27	4	< MDA	3	< MDA
28	2	< MDA	3	< MDA
29	3	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/21/01

MDA = 60 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-front trough

Notes: Originally unaffecetd, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
30	5	< MDA	10	< MDA
31	3	< MDA	35	155
32	3	< MDA	62	290

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/21/01

MDA = 60 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-exterior

Notes: Originally unaffecetd, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	5	< MDA	11	< MDA
34	9	< MDA	10	< MDA
35	6	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/21/01

MDA = 60 dpm/100 cm2

Survey Unit Number: 19 **Survey Unit:** Screw Classifier-exterior

Notes: Originally unaffecetd, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	2	< MDA	14	50
34	2	< MDA	10	< MDA
35	3	< MDA	13	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/20/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

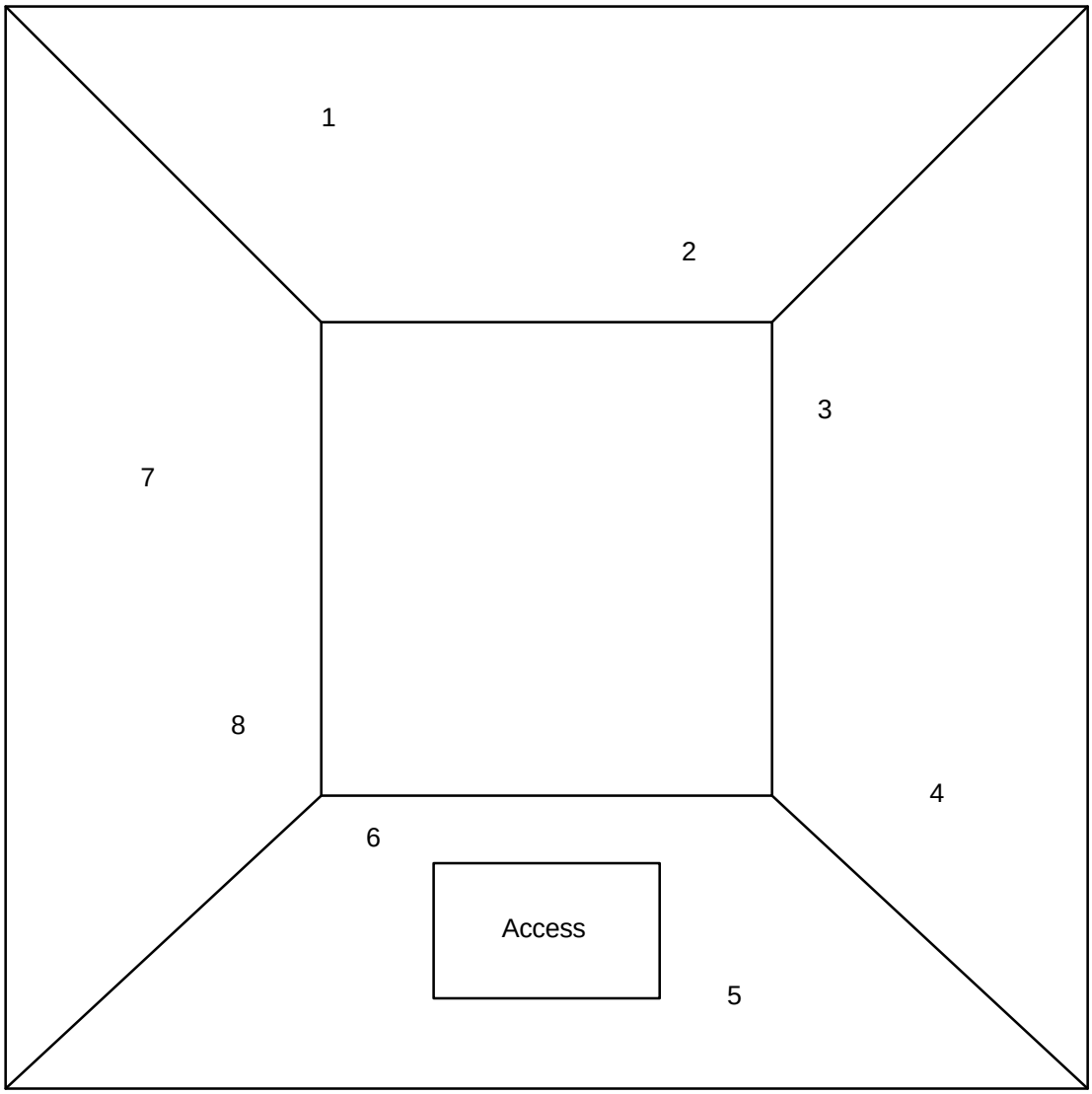
Serial Number: 161133

Survey date: 8/21/01

MDA = 60 dpm/100 cm2

Survey Unit Number: 20 **Survey Unit:** Screen Feed Sump, interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	5	< MDA	21	95
2	4	< MDA	46	220
3	3	< MDA	39	185
4	2	< MDA	36	170
5	2	< MDA	13	55
6	4	< MDA	45	215
7	3	< MDA	23	105
8	3	< MDA	47	225

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

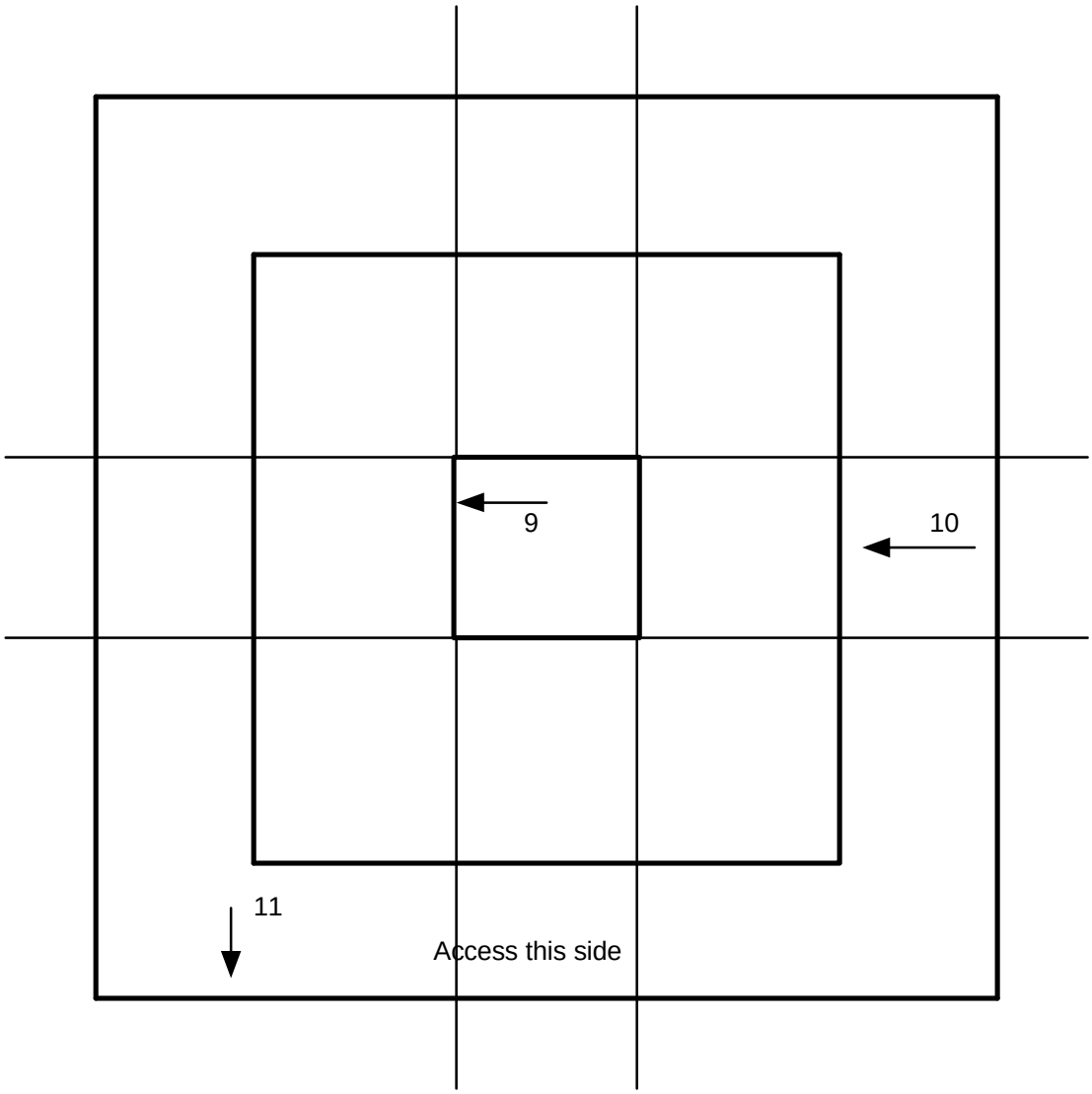
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 20 **Survey Unit:** Screen Feed Sump, frame over sump

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	4	< MDA	4	< MDA
10	5	< MDA	3	< MDA
11	6	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 20 **Survey Unit:** Screen Feed Sump, exterior

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	4	< MDA	4	< MDA
13	5	< MDA	3	< MDA
14	2	< MDA	2	< MDA
15	3	< MDA	17	75
20	3	< MDA	15	65
21	3	< MDA	22	100
23	3	< MDA	36	170
24	4	< MDA	53	255
26	2	< MDA	49	235

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 20 **Survey Unit:** Screen Feed Sump, exterior

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
16	5	< MDA	11	< MDA
17	2	< MDA	8	< MDA
18	2	< MDA	4	< MDA
19	3	< MDA	16	70
22	2	< MDA	13	55
25	2	< MDA	20	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

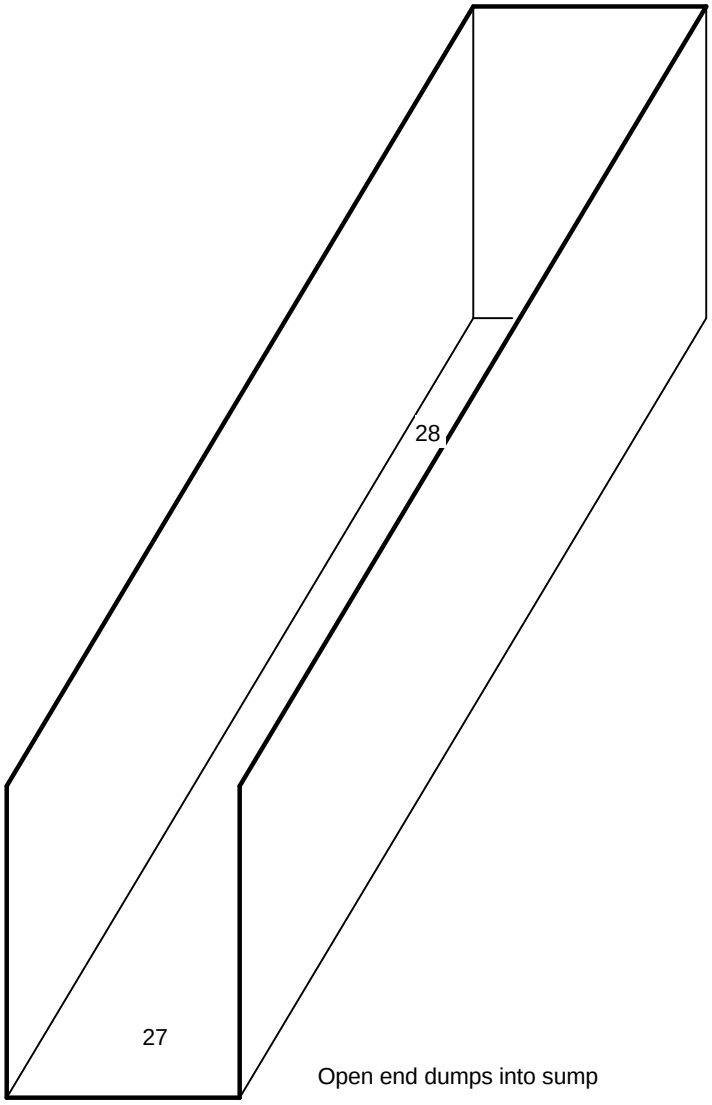
Serial Number: 134488

Survey date: 8/14/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 20 **Survey Unit:** Screen Feed Sump, launder

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	5	< MDA	39	185
28	7	< MDA	40	190

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

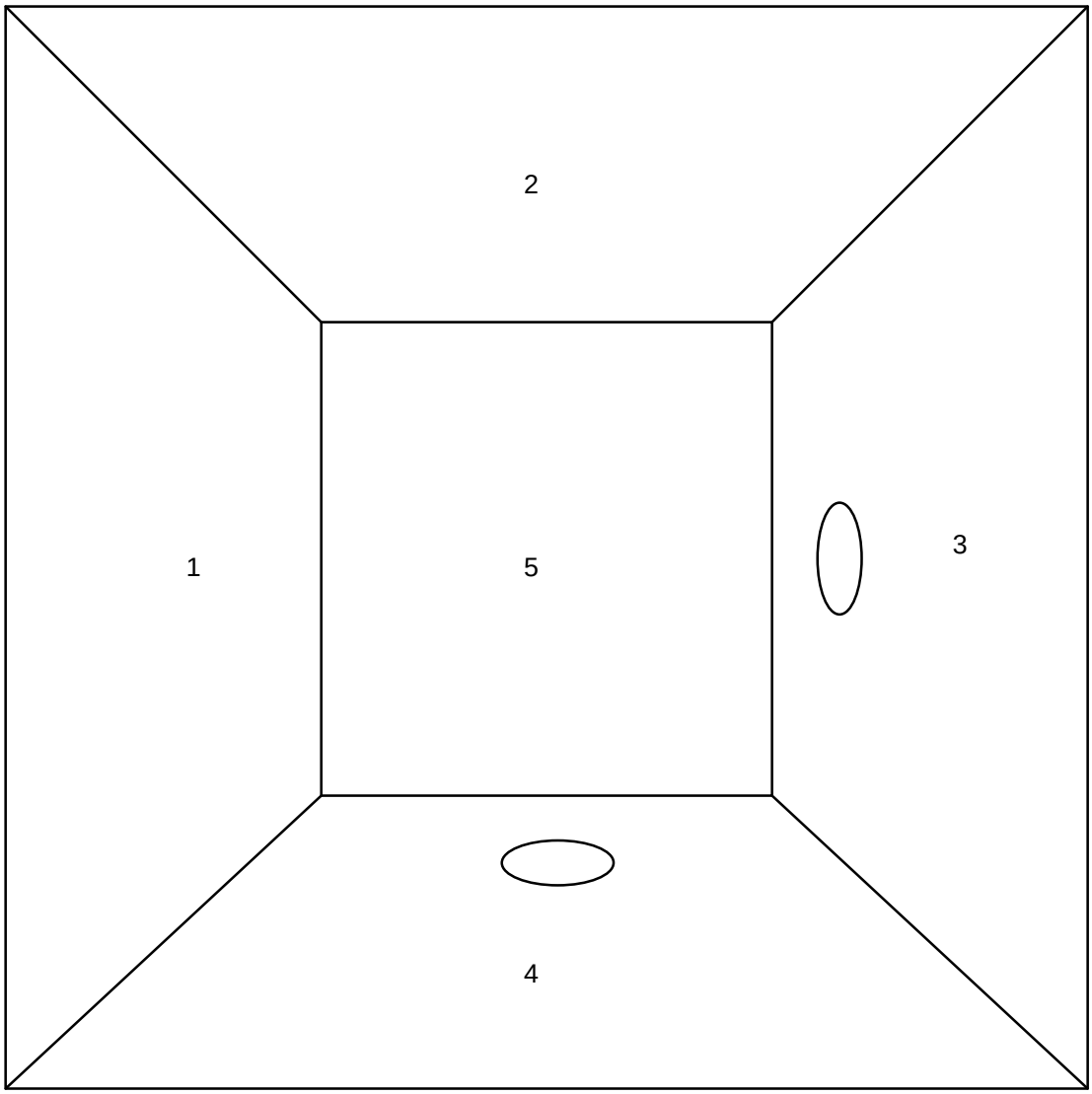
Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 21 **Survey Unit:** Magnet Feed Sump-interior

Notes: Unaffected. No launders or pipes.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	11	< MDA
2	2	< MDA	13	55
3	3	< MDA	16	70
4	2	< MDA	8	< MDA
5	9	< MDA	16	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 21 **Survey Unit:** Magnet Feed Sump-exterior

Notes: Unaffected. No launders or pipes.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	3	< MDA	17	75
9	1	< MDA	9	< MDA
14	5	< MDA	24	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 21 **Survey Unit:** Magnet Feed Sump-interior

Notes: Unaffected. No launders or pipes.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	0	< MDA	14	60
8	5	< MDA	11	< MDA
10	3	< MDA	16	70
11	6	< MDA	9	< MDA
12	3	< MDA	4	< MDA
13	3	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator-Exterior after stripping parts

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	2	< MDA
2	3	< MDA	7	< MDA
3	2	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator-Frame support

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
4	4	< MDA	0	< MDA
5	3	< MDA	1	< MDA
6	2	< MDA	3	< MDA
7	4	< MDA	2	< MDA
8	2	< MDA	0	< MDA
9	3	< MDA	6	< MDA
10	4	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator-Frame

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	5	< MDA	0	< MDA
12	7	< MDA	3	< MDA
13	3	< MDA	2	< MDA
14	4	< MDA	0	< MDA
15	5	< MDA	0	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator-Interior of Bell

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
16	6	< MDA	5	< MDA
17	6	< MDA	0	< MDA
18	3	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator - Miscellaneous Parts

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	2	< MDA	9	< MDA
20	3	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator - Miscellaneous Parts

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	4	< MDA
22	8	< MDA	4	< MDA
23	1	< MDA	2	< MDA
24	0	< MDA	16	75

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 10/1/01
MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 9/27/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 22

Survey Unit: High Intensity Wet Magnetic Separator - Miscellaneous Parts

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
25	3	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22 **Survey Unit:** High Intensity Wet Magnetic Separator - Miscellaneous Parts

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	2	< MDA	2	< MDA
27	3	< MDA	32	155

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 22

Survey Unit: High Intensity Wet Magnetic Separator - Yellow trough from under bell.

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
28	2	< MDA	7	< MDA
29	4	< MDA	12	55
30	7	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

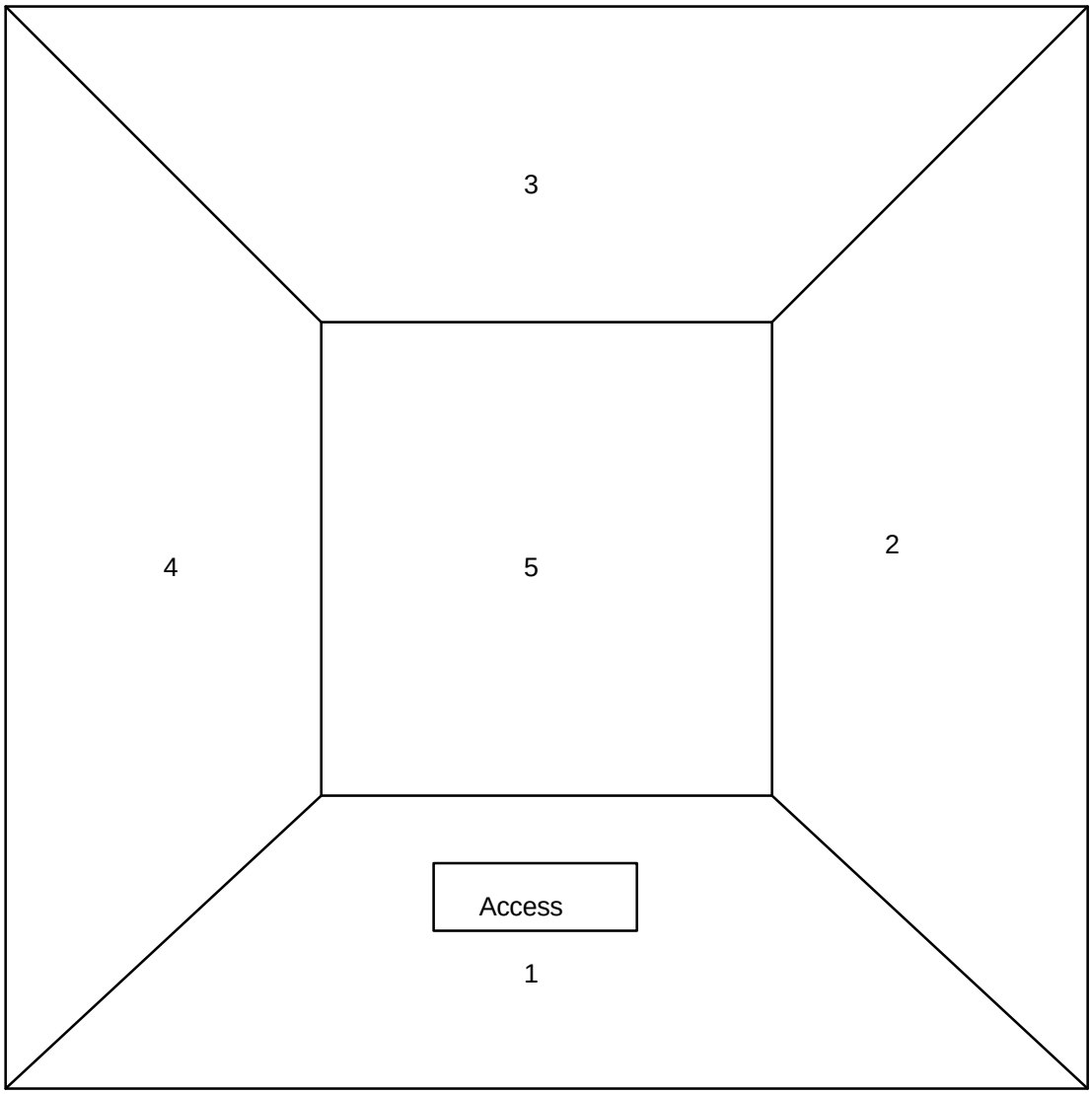
Serial Number: 161133

Survey date: 9/27/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 23 **Survey Unit:** Magnetics Feed Sump - interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	12	50
2	4	< MDA	11	< MDA
3	6	< MDA	13	55
4	6	< MDA	12	50
5	2	< MDA	27	125

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

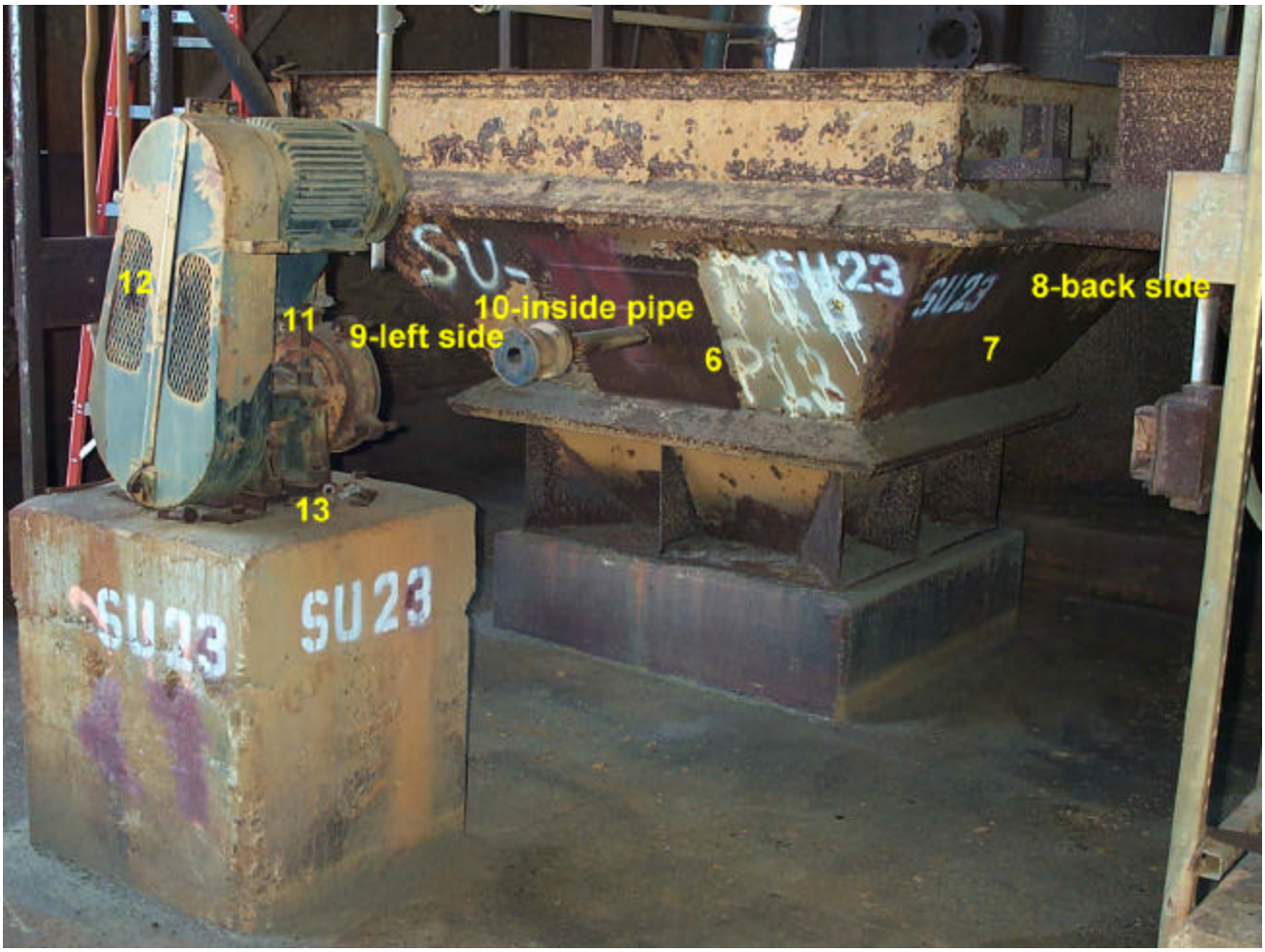
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 23 **Survey Unit:** Magnetics Feed Sump - exterior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	4	< MDA	8	< MDA
7	6	< MDA	7	< MDA
8	1	< MDA	7	< MDA
9	1	< MDA	9	< MDA
10	5	< MDA	17	75
11	4	< MDA	23	105
12	4	< MDA	18	80
13	6	< MDA	21	95

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

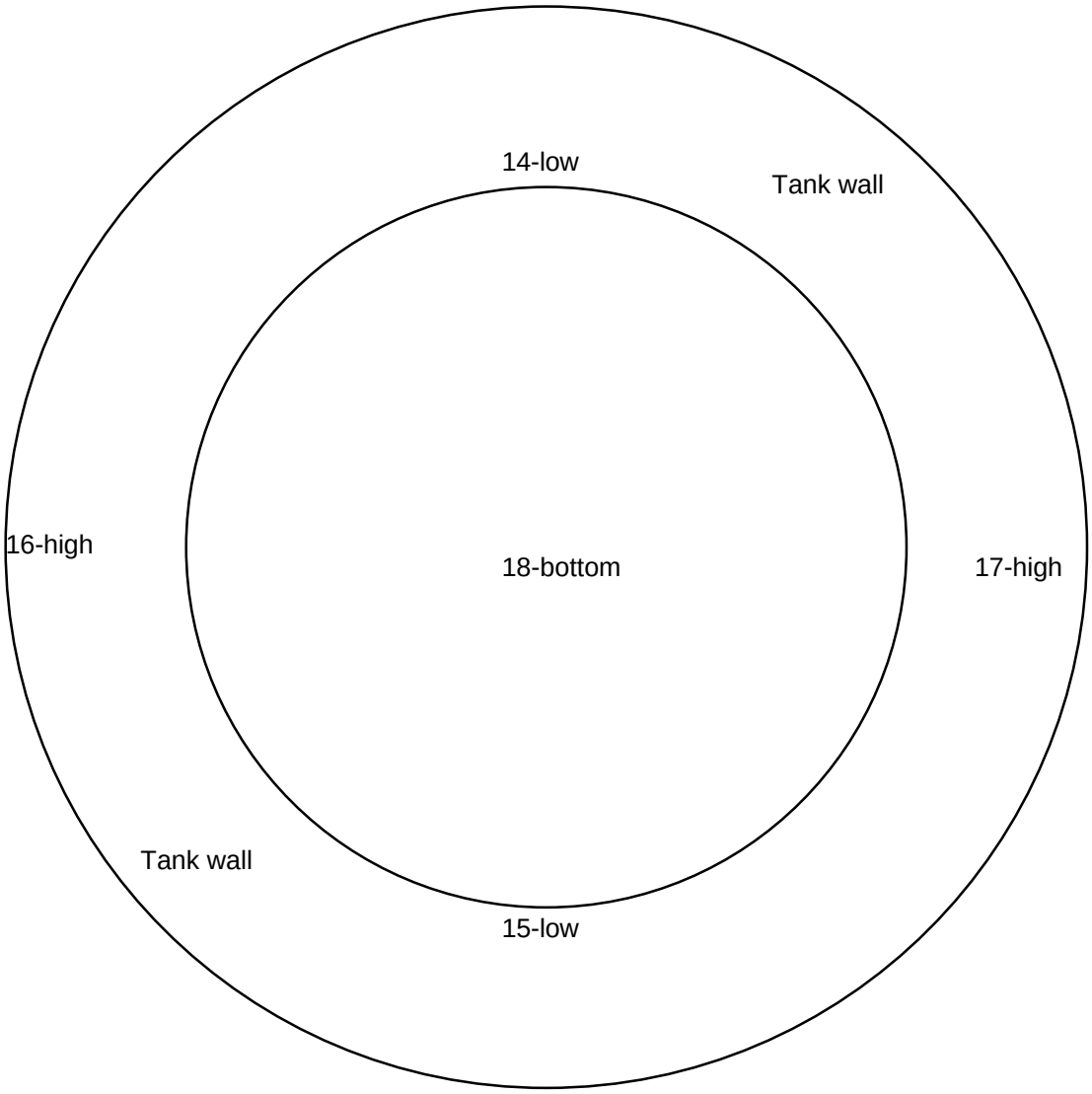
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 23 **Survey Unit:** Magnetics Feed Sump - interior of tank

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	4	< MDA	8	< MDA
15	5	< MDA	7	< MDA
16	7	< MDA	7	< MDA
17	6	< MDA	9	< MDA
18	4	< MDA	26	120

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 23 **Survey Unit:** Magnetics Feed Sump - tank internal framework

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	3	< MDA	5	< MDA
20	6	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

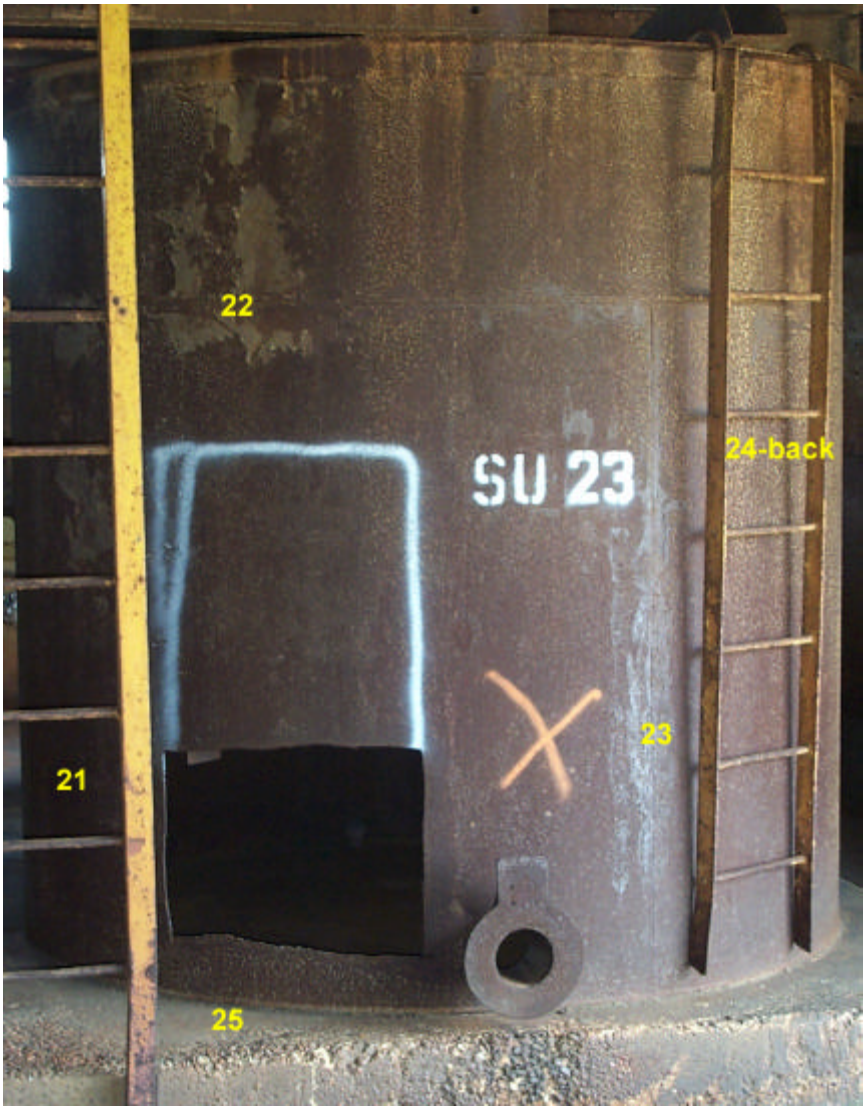
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 23 **Survey Unit:** Magnetics Feed Sump - Tank

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	6	< MDA
22	5	< MDA	5	< MDA
23	4	< MDA	5	< MDA
24	1	< MDA	4	< MDA
25	4	< MDA	22	100

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

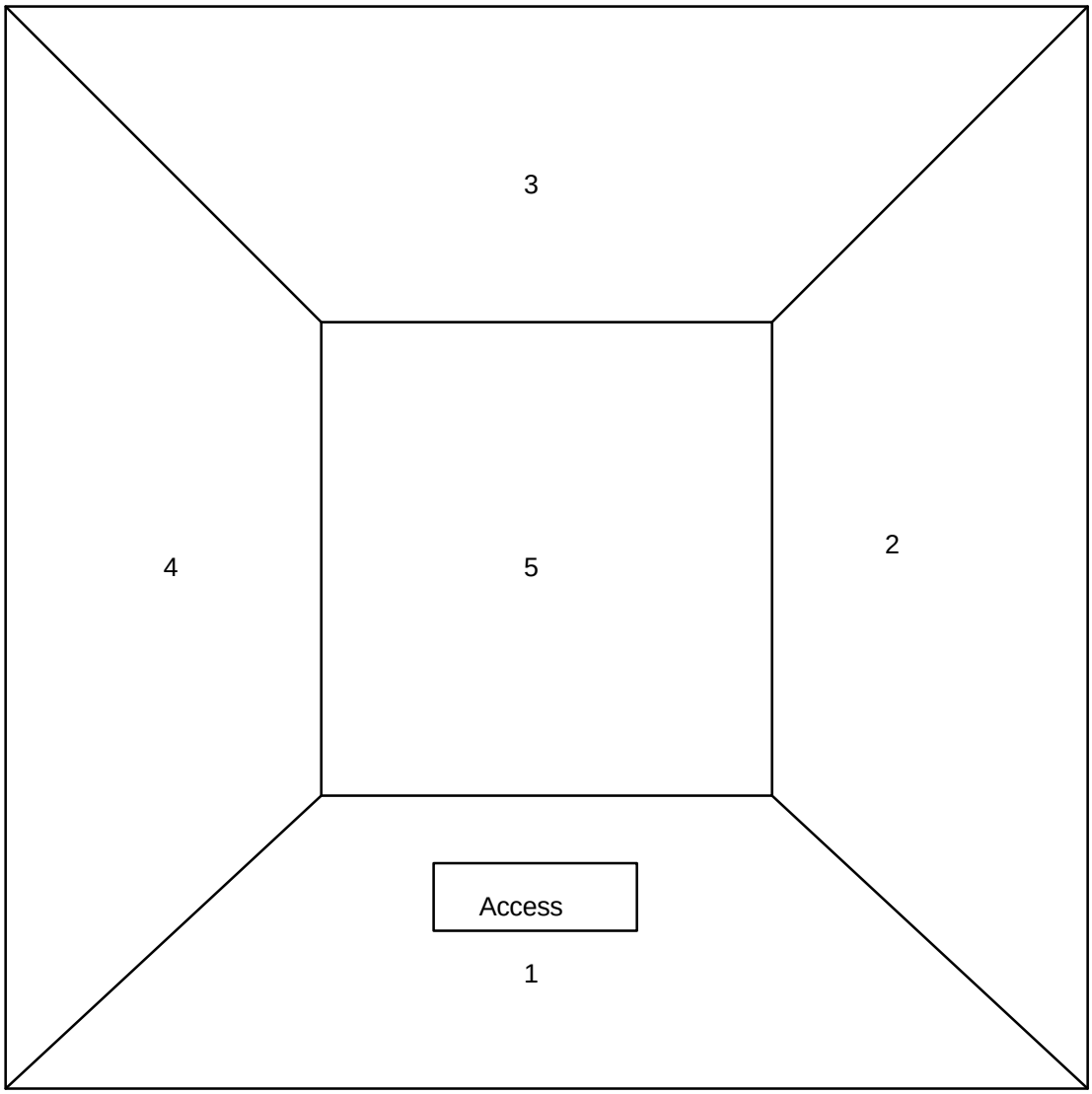
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump - interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	5	< MDA	13	55
2	1	< MDA	11	< MDA
3	4	< MDA	10	< MDA
4	2	< MDA	14	60
5	5	< MDA	22	100

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

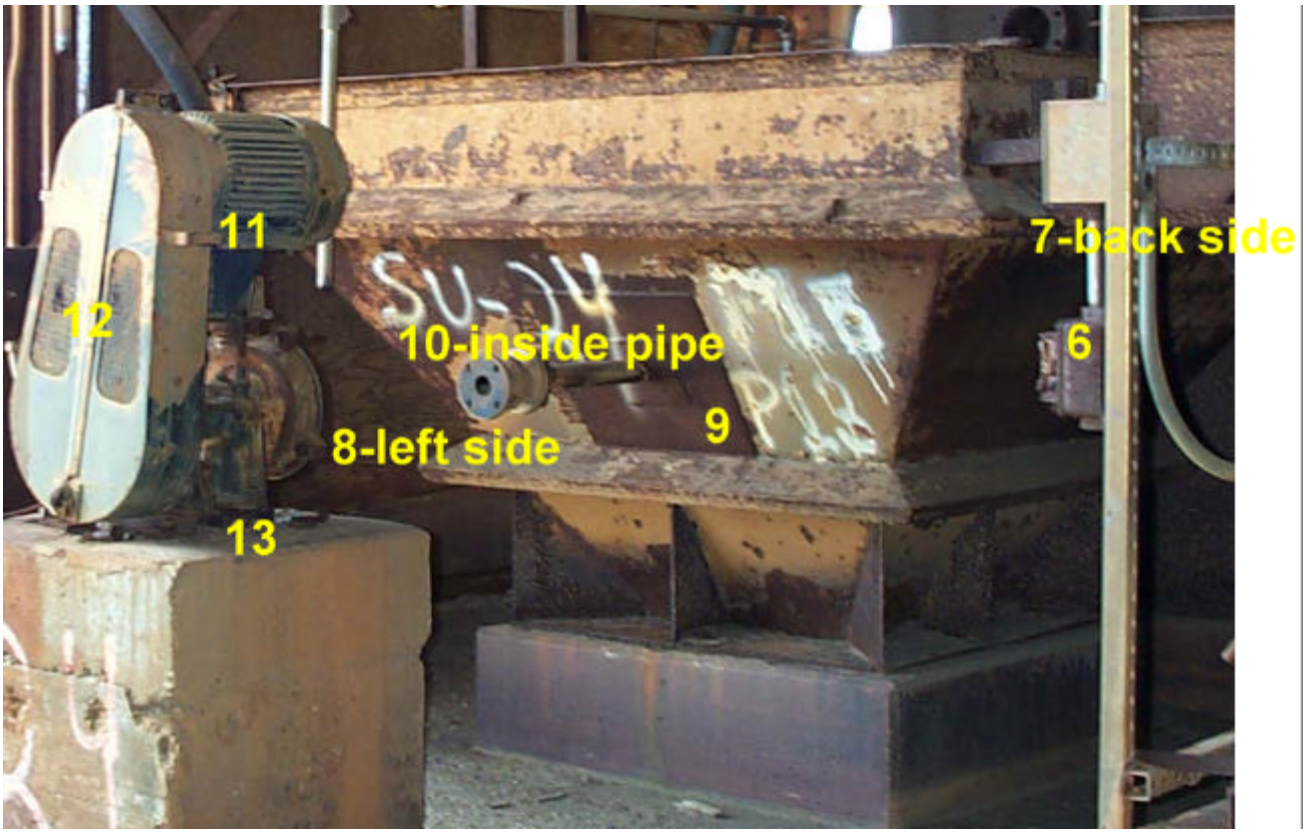
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump - Exterior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	4	< MDA	8	< MDA
7	4	< MDA	9	< MDA
8	5	< MDA	7	< MDA
9	6	< MDA	6	< MDA
10	1	< MDA	9	< MDA
11	2	< MDA	16	70
12	4	< MDA	10	< MDA
13	3	< MDA	27	125

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

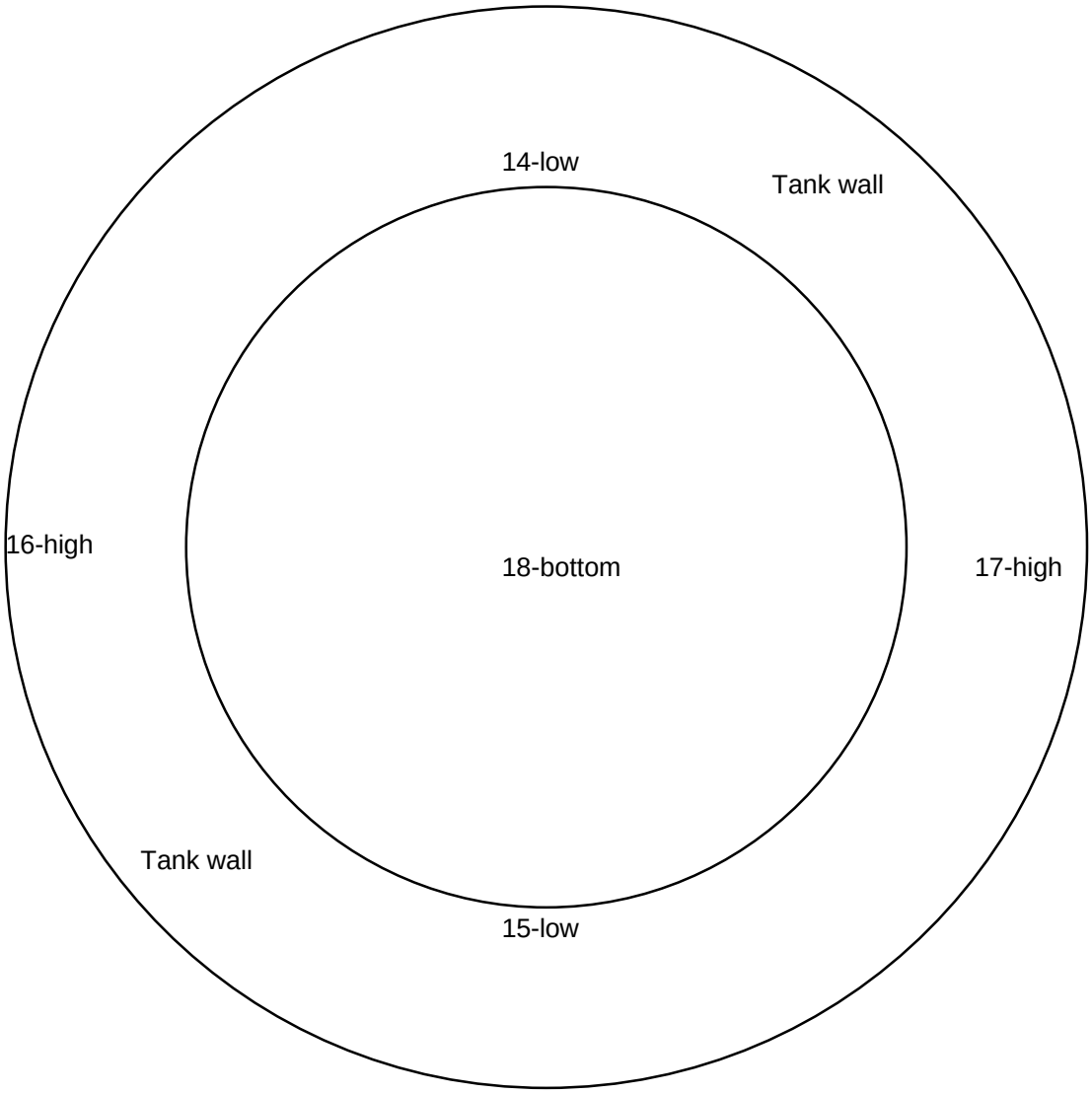
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump - interior of tank

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	3	< MDA	10	< MDA
15	1	< MDA	8	< MDA
16	2	< MDA	11	< MDA
17	3	< MDA	7	< MDA
18	4	< MDA	65	315

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump - interior of tank, frame

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	3	< MDA	5	< MDA
20	6	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

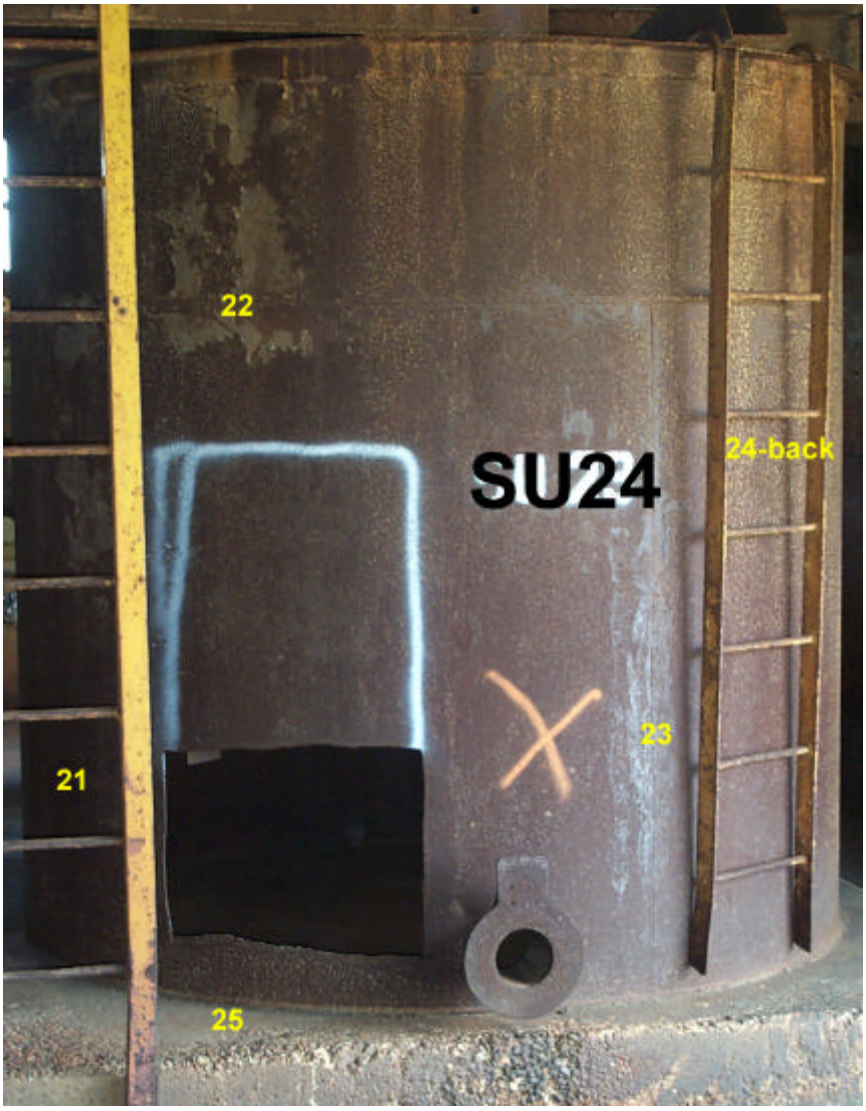
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump - interior of tank

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	5	< MDA	8	< MDA
22	6	< MDA	9	< MDA
23	5	< MDA	10	< MDA
24	5	< MDA	8	< MDA
25	4	< MDA	21	95

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

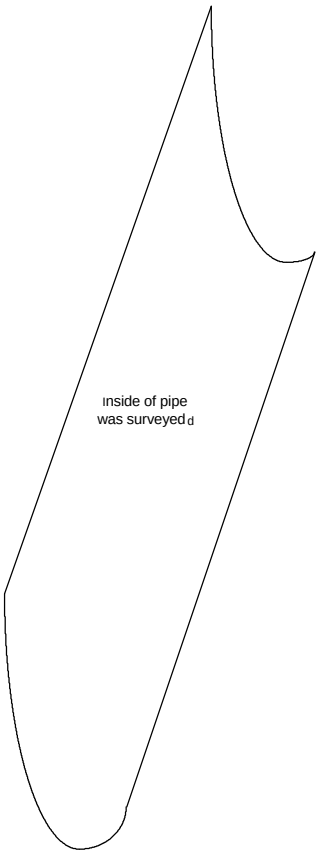
Serial Number: 134488

Survey date: 8/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 24 **Survey Unit:** Non-Magnetics Feed Sump-Pipes

Notes: Unaffected. All sections 10' long.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	1	< MDA	4	< MDA
27	1	< MDA	11	< MDA
28	1	< MDA	8	< MDA
29	2	< MDA	6	< MDA
30	3	< MDA	4	< MDA
31	0	< MDA	5	< MDA
32	3	< MDA	3	< MDA
33	2	< MDA	9	< MDA
34	3	< MDA	3	< MDA
35	2	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/7/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 25 **Survey Unit:** Table Scavenger Spirals

Notes: Unaffected.
Locations 1 thru 10 are inside the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	6	< MDA	25	95
2	1	< MDA	18	< MDA
3	6	< MDA	20	70
4	5	< MDA	24	90
5	3	< MDA	21	75
6	4	< MDA	22	80
7	6	< MDA	22	80
8	2	< MDA	20	70
9	2	< MDA	13	< MDA
10	6	< MDA	29	115

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 25 **Survey Unit:** Table Scavenger Spirals

Notes: Unaffected.
Locations 11 thru 15 are inside the spiral.
Locations 16 thru 20 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	7	< MDA	15	< MDA
12	4	< MDA	21	75
13	6	< MDA	11	< MDA
14	4	< MDA	25	95
15	3	< MDA	19	< MDA
16	7	< MDA	9	< MDA
17	2	< MDA	12	< MDA
18	4	< MDA	11	< MDA
19	1	< MDA	6	< MDA
20	4	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 25 **Survey Unit:** Table Scavenger Spirals

Notes: Unaffected.
Locations 21 thru 30 are on the outside of the spiral.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	1	< MDA	7	< MDA
22	3	< MDA	6	< MDA
23	6	< MDA	7	< MDA
24	3	< MDA	7	< MDA
25	8	< MDA	6	< MDA
26	6	< MDA	6	< MDA
27	2	< MDA	11	< MDA
28	6	< MDA	17	< MDA
29	6	< MDA	2	< MDA
30	3	< MDA	9	< MDA

Smear Info

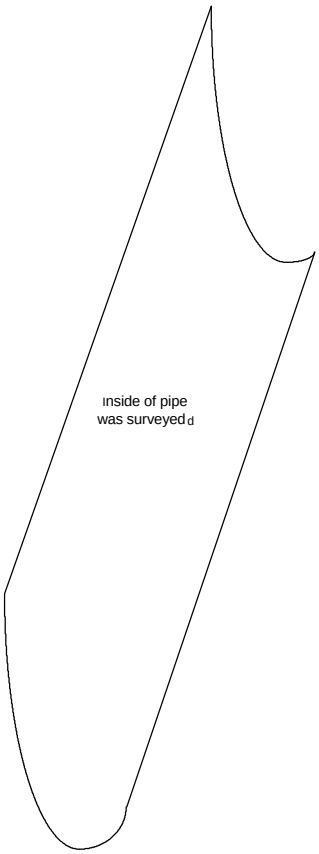
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 25 **Survey Unit:** Table Scavenger Spirals-Pipes

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	2	< MDA	6	< MDA
32	3	< MDA	6	< MDA
33	2	< MDA	8	< MDA
34	4	< MDA	5	< MDA
35	4	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/6/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 26 **Survey Unit:** Scavenger Table Feed Sump

Notes: Unaffecetd. This unit was totally missing from the wet mill.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)

Smear Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Scan and Scaler Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-top table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	19	< MDA
2	2	< MDA	114	530
3	0	< MDA	30	110
4	2	< MDA	44	180

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-middle table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	5	< MDA	86	390
6	6	< MDA	80	360
7	4	< MDA	7	< MDA
8	4	< MDA	26	90
9	4	< MDA	3	< MDA
10	3	< MDA	6	< MDA
11	7	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-bottom table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	6	< MDA	151	715
13	7	< MDA	152	720
14	6	< MDA	27	95
15	2	< MDA	25	85
16	12	< MDA	30	110
17	2	< MDA	39	155
18	4	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-long side table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	5	< MDA	8	< MDA
20	5	< MDA	52	220
21	2	< MDA	60	260
22	1	< MDA	27	95
23	5	< MDA	19	< MDA
24	4	< MDA	10	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-long side table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
28	5	< MDA	10	< MDA
29	3	< MDA	6	< MDA
30	6	< MDA	17	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 27 **Survey Unit:** Scavenger Table Separators-motor end

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
28	5	< MDA	10	< MDA
29	3	< MDA	6	< MDA
30	6	< MDA	17	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/11/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	9	< MDA	8	< MDA
2	8	< MDA	7	< MDA
3	11	< MDA	16	< MDA
4	7	< MDA	20	75
9	6	< MDA	13	< MDA
10	7	< MDA	15	< MDA
11	12	< MDA	8	< MDA
12	8	< MDA	13	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

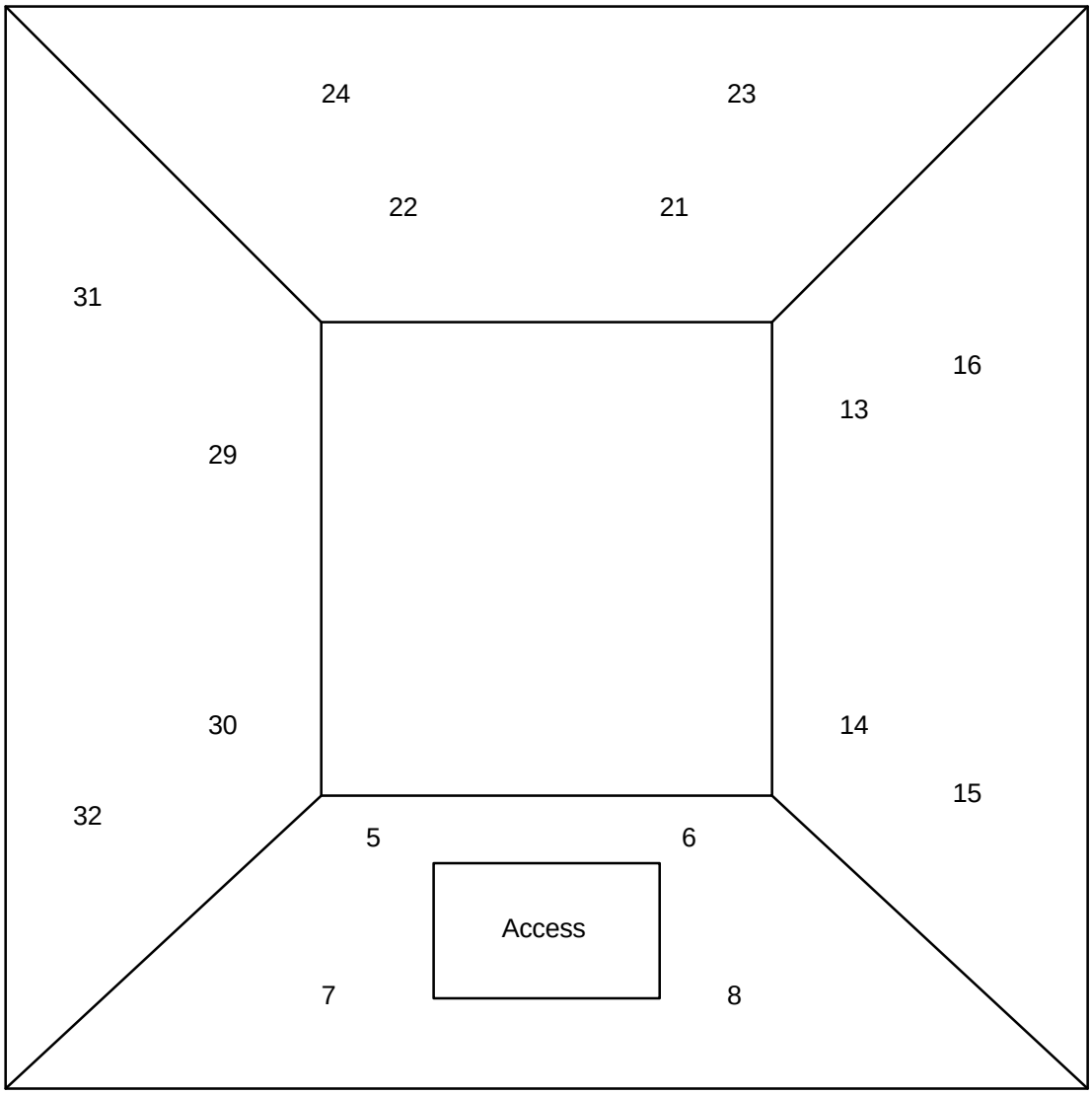
Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump-interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	10	< MDA	18	< MDA
6	5	< MDA	12	< MDA
7	9	< MDA	18	< MDA
8	10	< MDA	14	< MDA
13	4	< MDA	17	< MDA
14	8	< MDA	17	< MDA
15	7	< MDA	15	< MDA
16	8	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
17	4	< MDA	14	< MDA
18	7	< MDA	13	< MDA
19	6	< MDA	14	< MDA
20	5	< MDA	7	< MDA
25	7	< MDA	18	< MDA
26	8	< MDA	9	< MDA
27	7	< MDA	16	< MDA
28	8	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

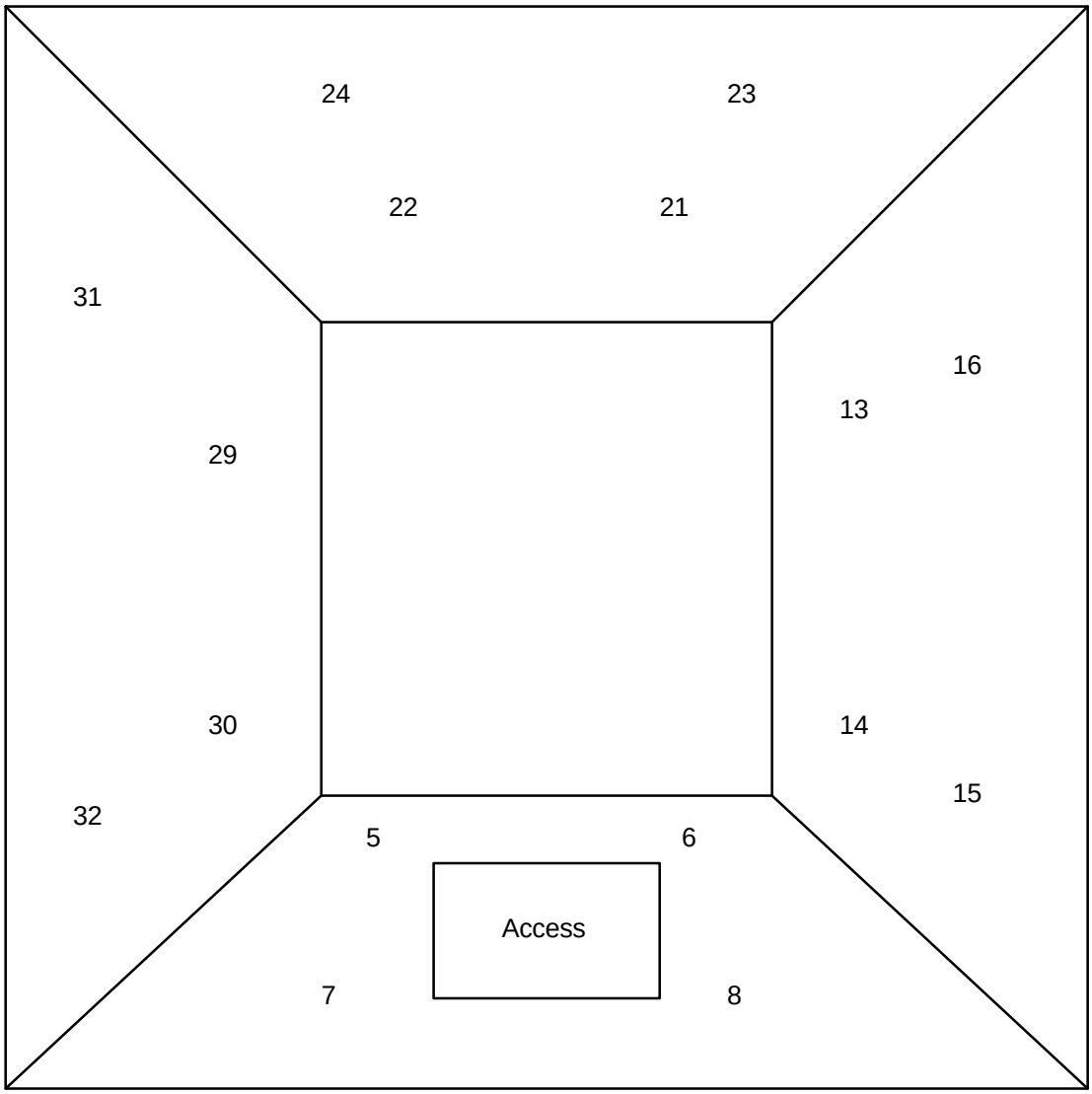
Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump-interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	8	< MDA	14	< MDA
22	4	< MDA	16	< MDA
23	10	< MDA	16	< MDA
24	7	< MDA	16	< MDA
29	4	< MDA	17	< MDA
30	9	< MDA	15	< MDA
31	4	< MDA	18	< MDA
32	9	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

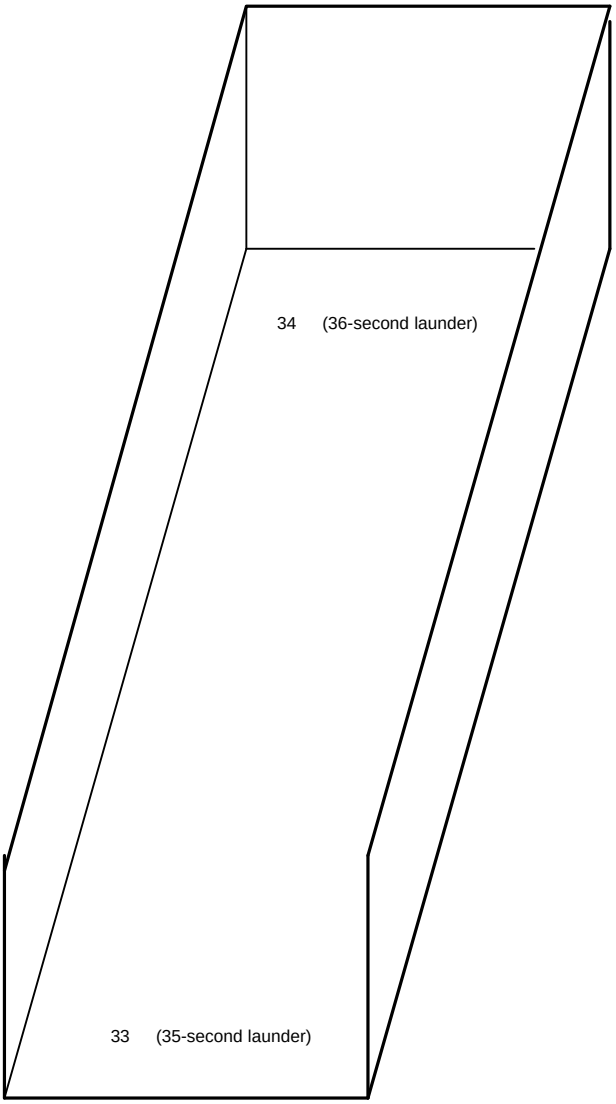
Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump-interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
33	3	< MDA	37	160
34	4	< MDA	43	190
35	3	< MDA	42	185
36	5	< MDA	46	205

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

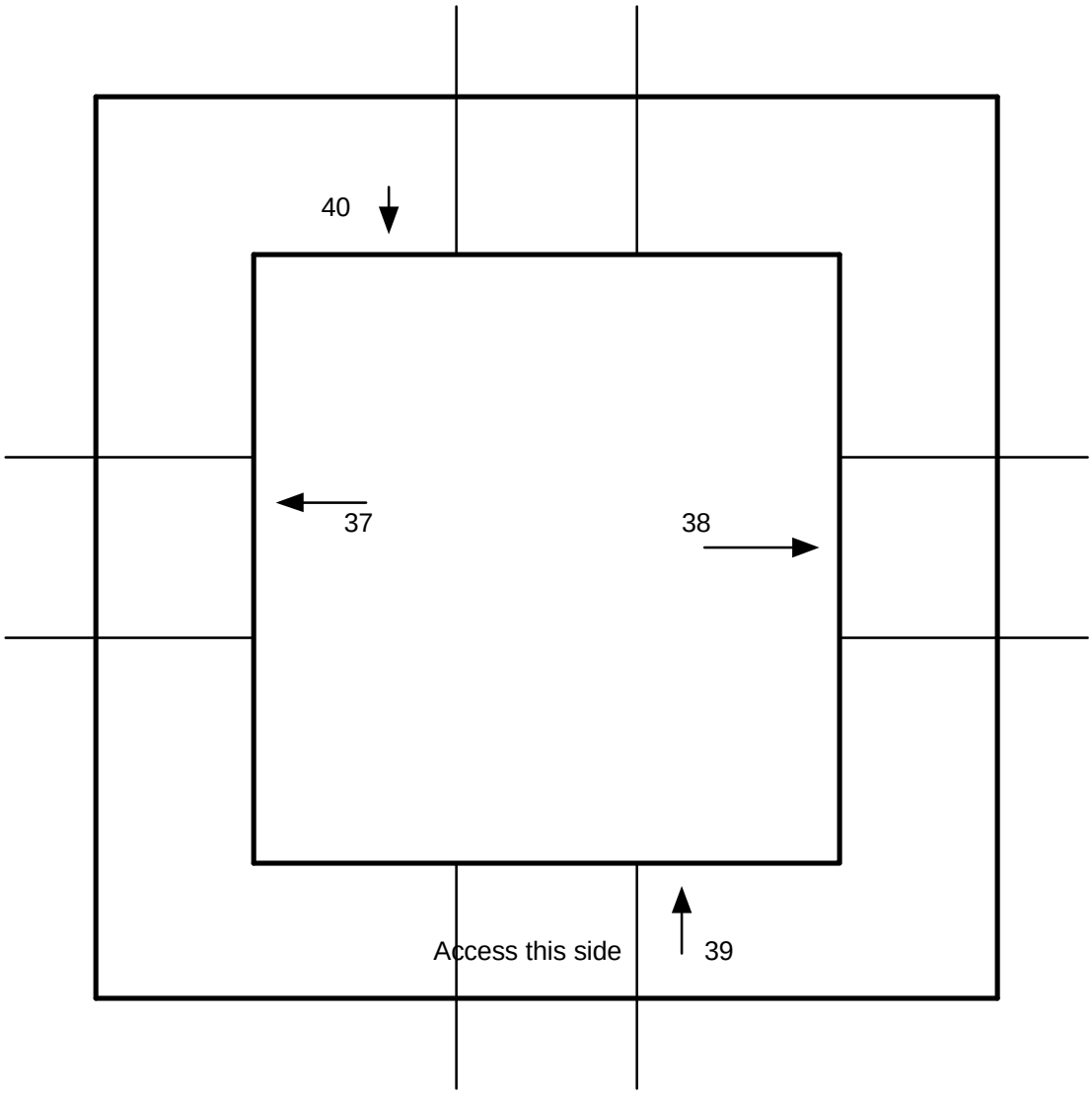
Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 28 **Survey Unit:** Tails Sump-interior

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
37	4	< MDA	9	< MDA
38	7	< MDA	11	< MDA
39	6	< MDA	10	< MDA
40	5	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/11/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Top Table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	2	< MDA
2	3	< MDA	5	< MDA
3	1	< MDA	5	< MDA
4	3	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

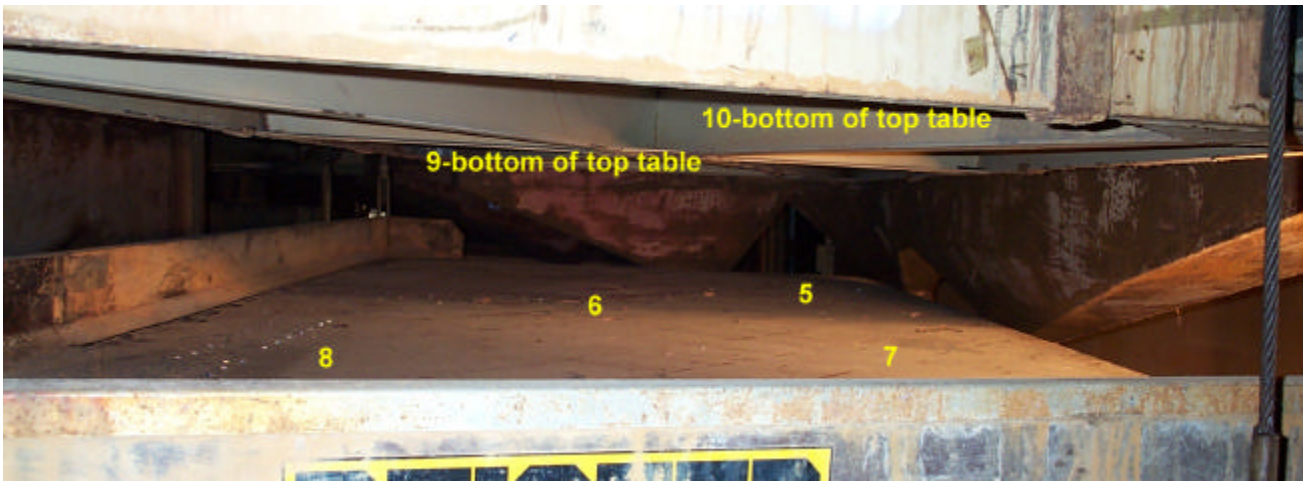
Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Mid Table

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	6	< MDA	1	< MDA
6	5	< MDA	1	< MDA
7	6	< MDA	3	< MDA
8	4	< MDA	2	< MDA
9	3	< MDA	34	165
10	4	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

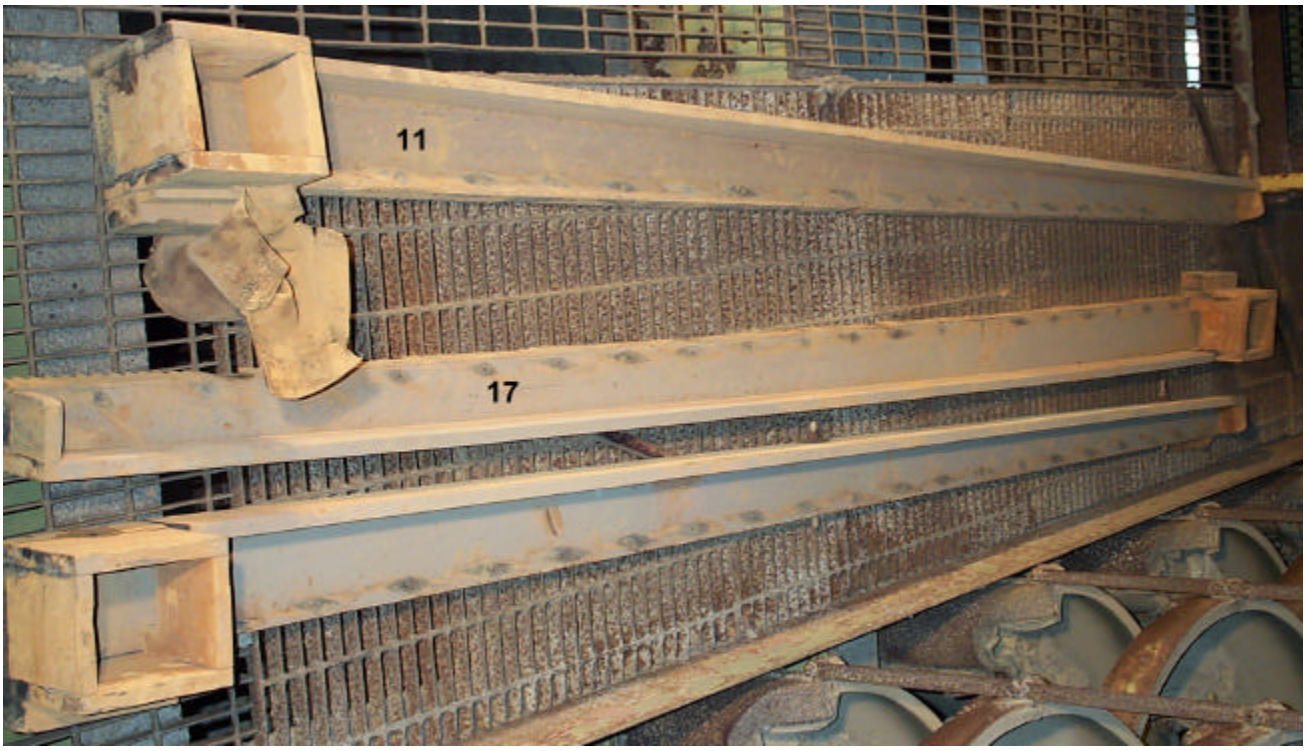
Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Mid Table

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	5	< MDA	1	< MDA
17	9	40	17	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Bottom Table

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	10	45	3	< MDA
13	3	< MDA	2	< MDA
14	1	< MDA	8	< MDA
15	2	< MDA	7	< MDA
16	2	< MDA	6	< MDA
18	5	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Side

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	3	< MDA	18	85
20	4	< MDA	13	60
21	3	< MDA	9	40
22	6	< MDA	1	< MDA
23	4	< MDA	11	50
24	5	< MDA	10	45

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Trough end

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
25	1	< MDA	5	< MDA
26	5	< MDA	7	< MDA
27	4	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 29 **Survey Unit:** Main Table Separators-Motor end

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
28	5	< MDA	4	< MDA
29	2	< MDA	1	< MDA
30	3	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/1/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

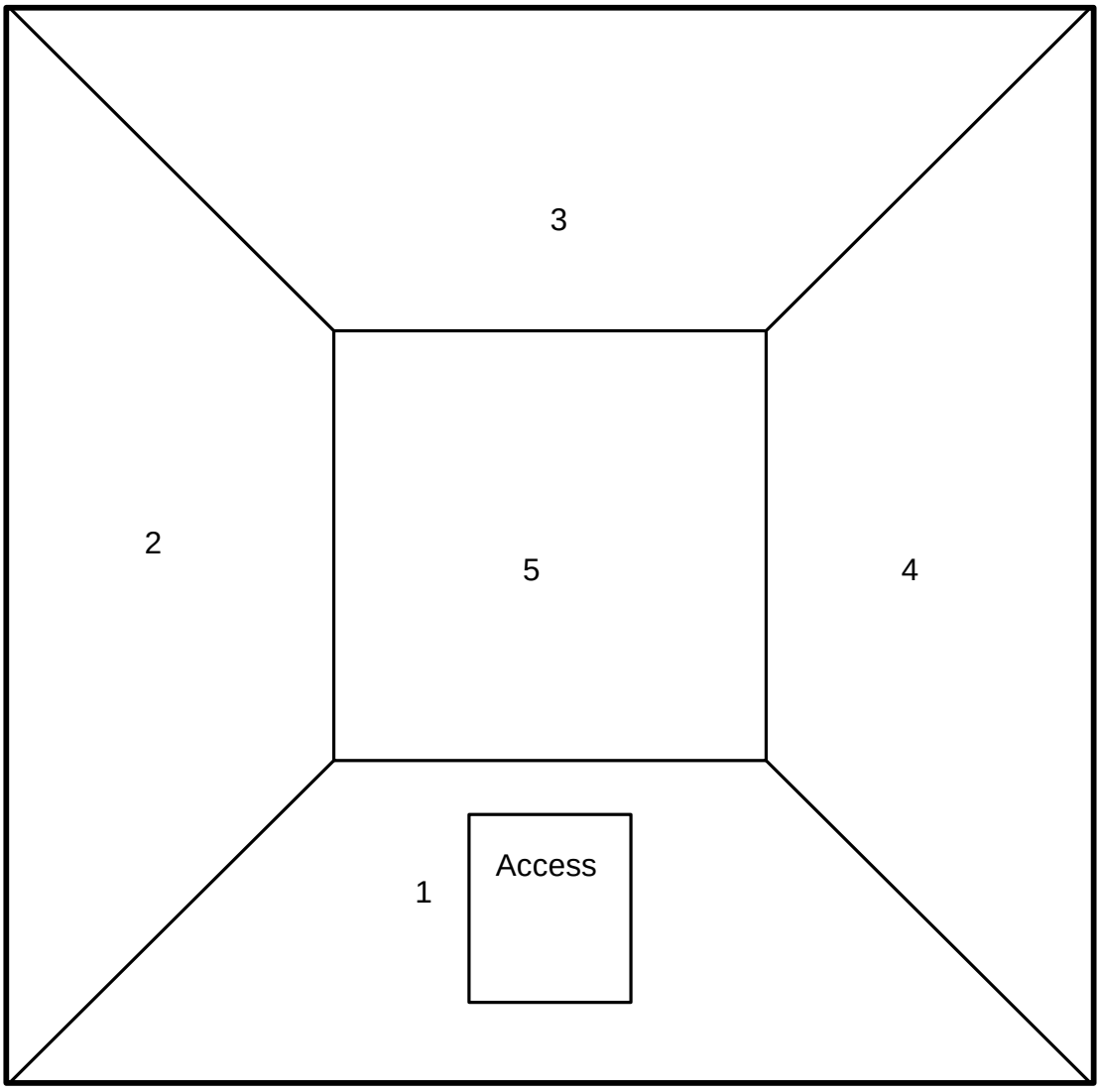
Serial Number: 161133

Survey date: 10/2/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 30 **Survey Unit:** Classifier Cyclone Feed Sump - interior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	6	< MDA	11	< MDA
2	4	< MDA	14	< MDA
3	6	< MDA	13	< MDA
4	4	< MDA	12	< MDA
5	7	< MDA	18	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 30 **Survey Unit:** Classifier Cyclone Feed Sump - exterior showing pump removed

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	3	< MDA	7	< MDA
7	5	< MDA	14	< MDA
11	3	< MDA		
12	4	< MDA	134	645

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 30 **Survey Unit:** Classifier Cyclone Feed Sump - exterior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	5	< MDA	5	< MDA
9	0	< MDA	22	85
10	5	< MDA	21	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

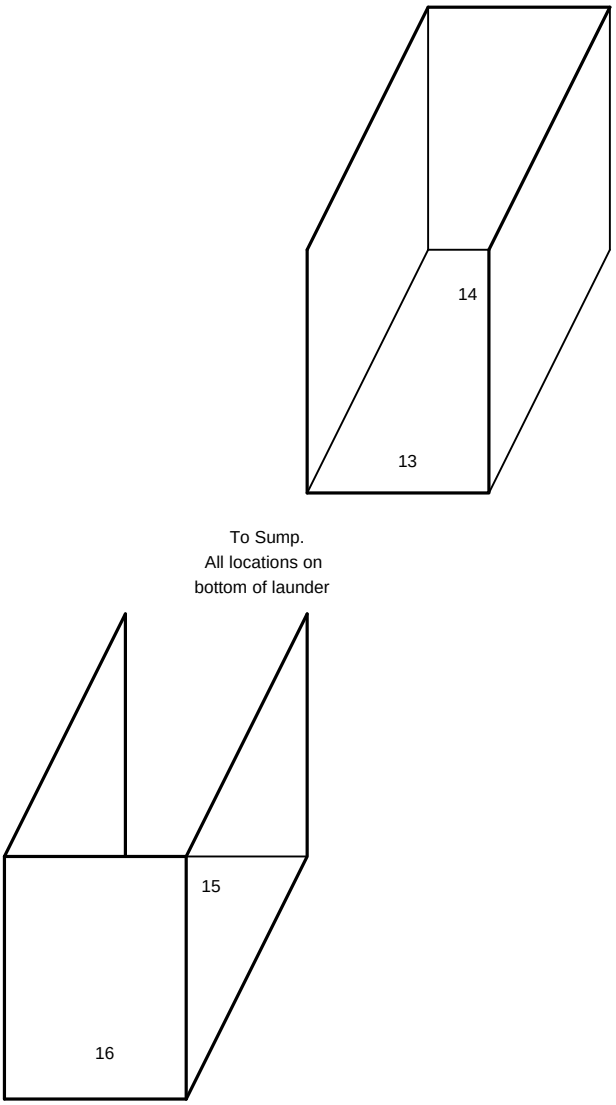
Serial Number: 134488

Survey date: 8/16/01

MDA = 66 dpm/100 cm2

Survey Unit Number: 30 **Survey Unit:** Classifier Cyclone Feed Sump - exterior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	4	< MDA	59	285
14	6	< MDA	35	165
15	7	< MDA	54	260
16	7	< MDA	57	275

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 10/22/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

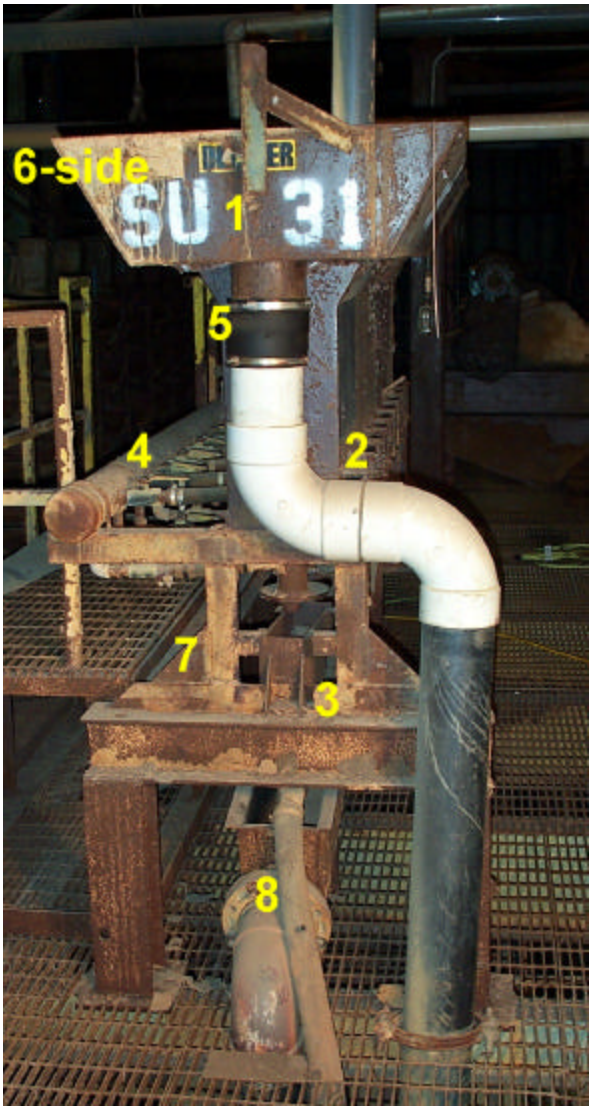
Serial Number: 161133

Survey date: 10/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 31 **Survey Unit:** Hydro Classifier, side view

Notes: Affected



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	0	< MDA	10	< MDA
2	6	< MDA	17	< MDA
3	1	< MDA	21	< MDA
4	2	< MDA	27	95
5	4	< MDA	8	< MDA
6	4	< MDA	1	< MDA
7	3	< MDA	86	390
8	3	< MDA	31	115

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

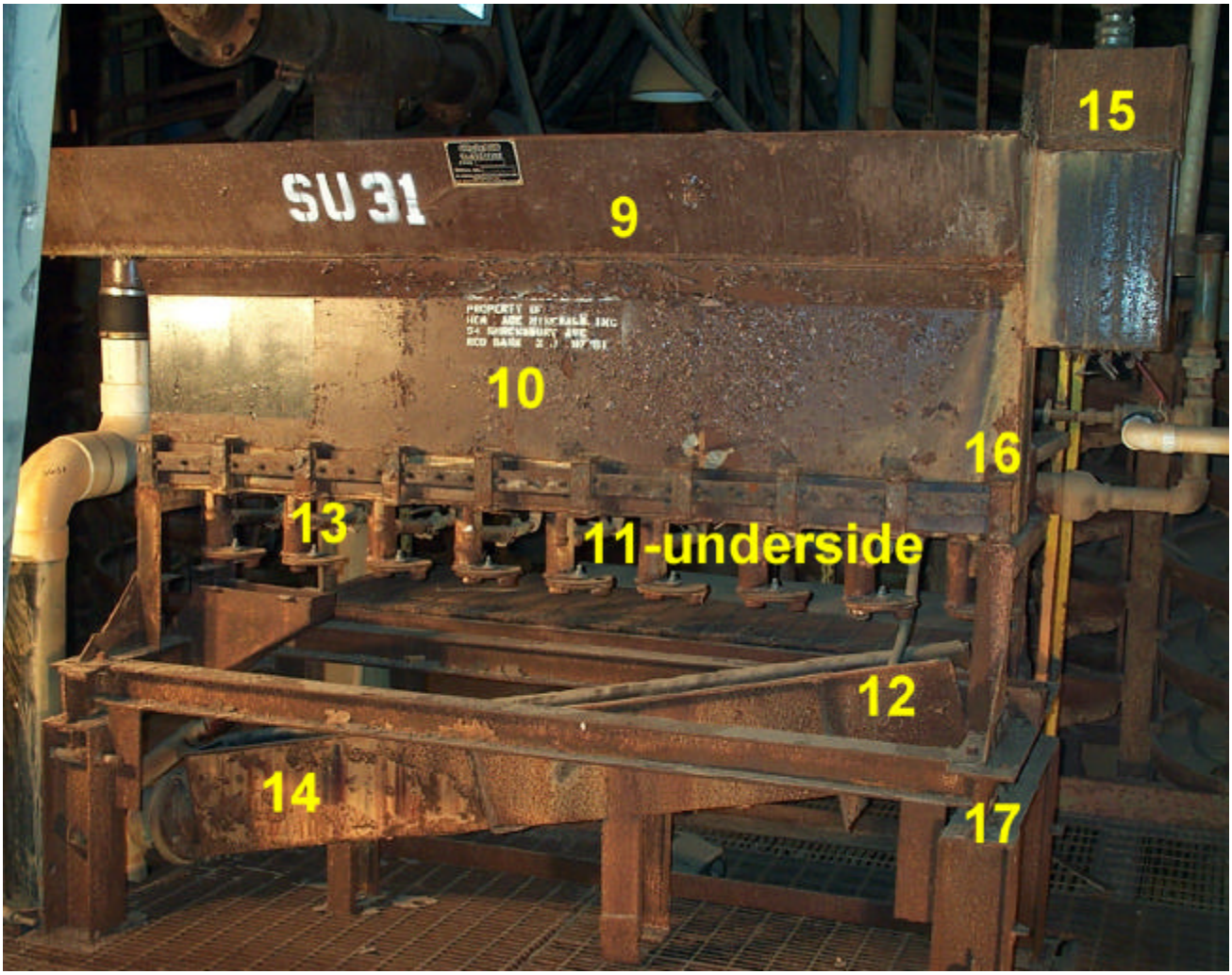
Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 31 **Survey Unit:** Hydro Classifier, front view

Notes: Affected



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	6	< MDA	3	< MDA
10	2	< MDA	6	< MDA
11	1	< MDA	5	< MDA
12	2	< MDA	15	< MDA
13	1	< MDA	24	80
14	4	< MDA	17	< MDA
15	0	< MDA	17	< MDA
16	1	< MDA	21	< MDA
17	4	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

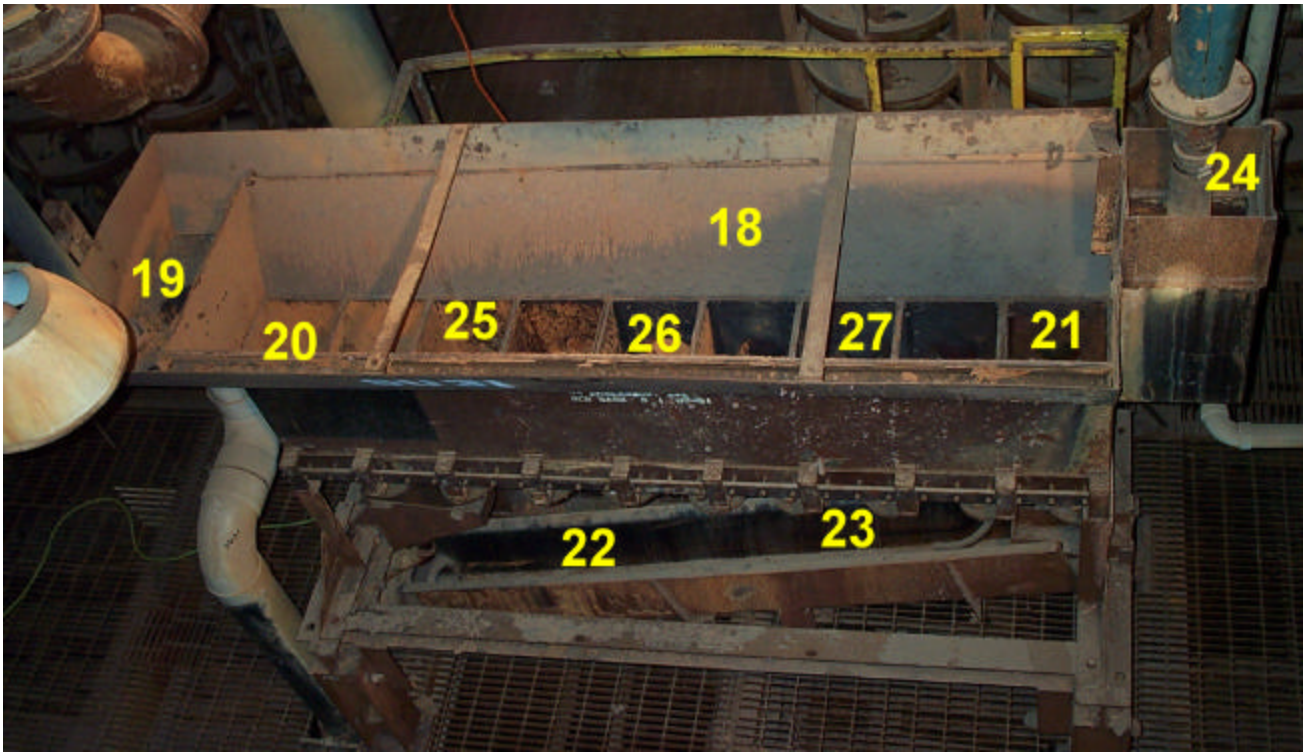
Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 31 **Survey Unit:** Hydro Classifier, top view

Notes: Affected



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	6	< MDA	114	530
19	6	< MDA	52	220
20	25	85	211	1015
21	19	< MDA	220	1060
22	17	< MDA	188	900
23	21	< MDA	182	870
24	9	< MDA	18	< MDA
25	18	< MDA	227	1095
26	21	< MDA	189	905
27	19	< MDA	201	965

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 7/12/01

MDA = 79 dpm/100 cm2

Survey Unit Number: 32 **Survey Unit:** Dryer Filter Feed Sump

Notes: Affected. Unit was not located on site.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)

Smear Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Scan and Scaler Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Dryer-Cylcone exterior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	1	< MDA	34	160
2	2	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

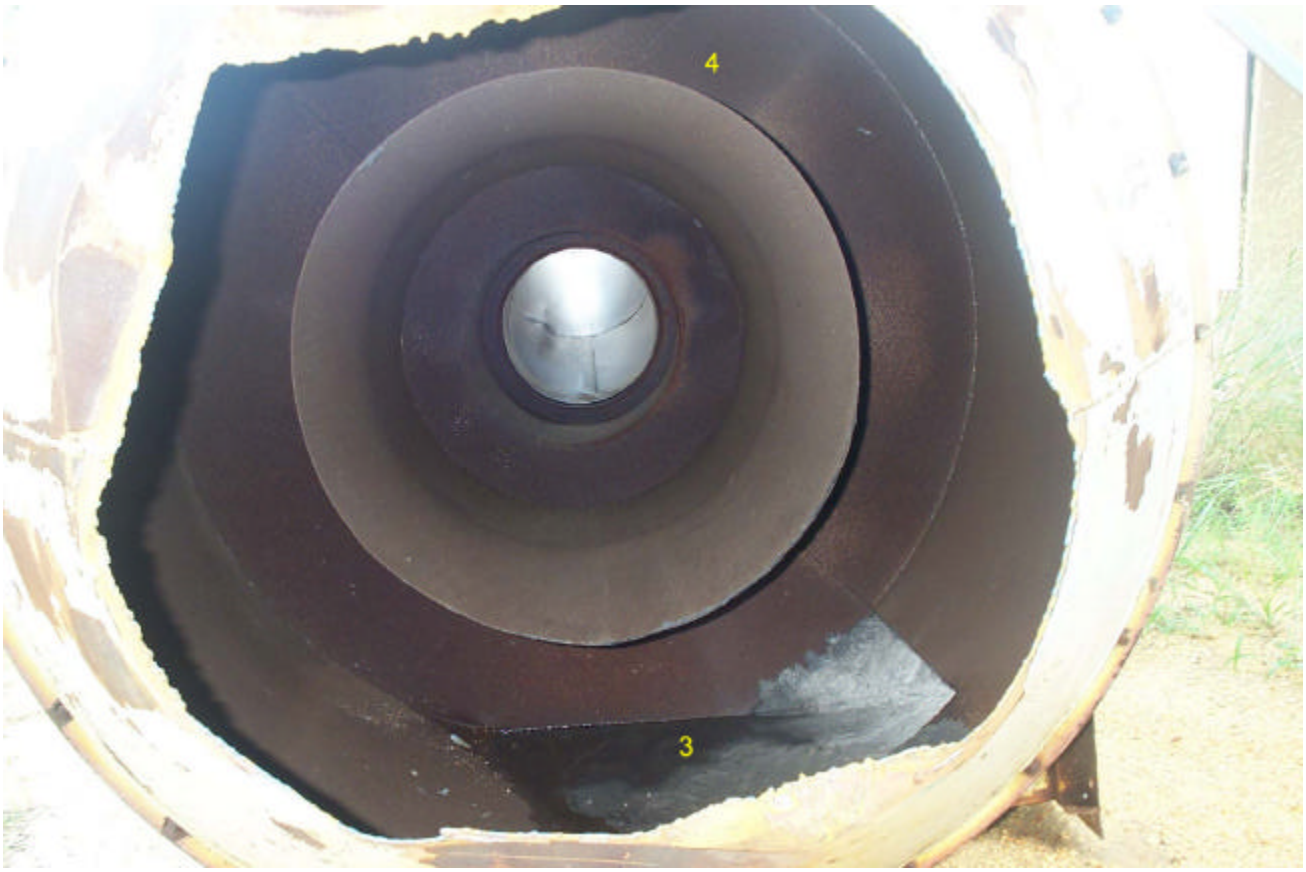
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Dryer-Cylcone interior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
3	3	< MDA	61	295
4	15	65	130	640

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Exterior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	2	< MDA	31	145
6	2	< MDA	45	215
7	4	< MDA	11	< MDA
8	7	< MDA	12	50
9	13	55	62	300
10	1	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Cylcone interior

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	1	< MDA	69	335
12	1	< MDA	29	135
13	3	< MDA	31	145
14	2	< MDA	8	< MDA
15	6	< MDA	19	85
16	1	< MDA	1	< MDA
17	1	< MDA	5	< MDA
18	3	< MDA	21	95
19	4	< MDA	4	< MDA
20	0	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

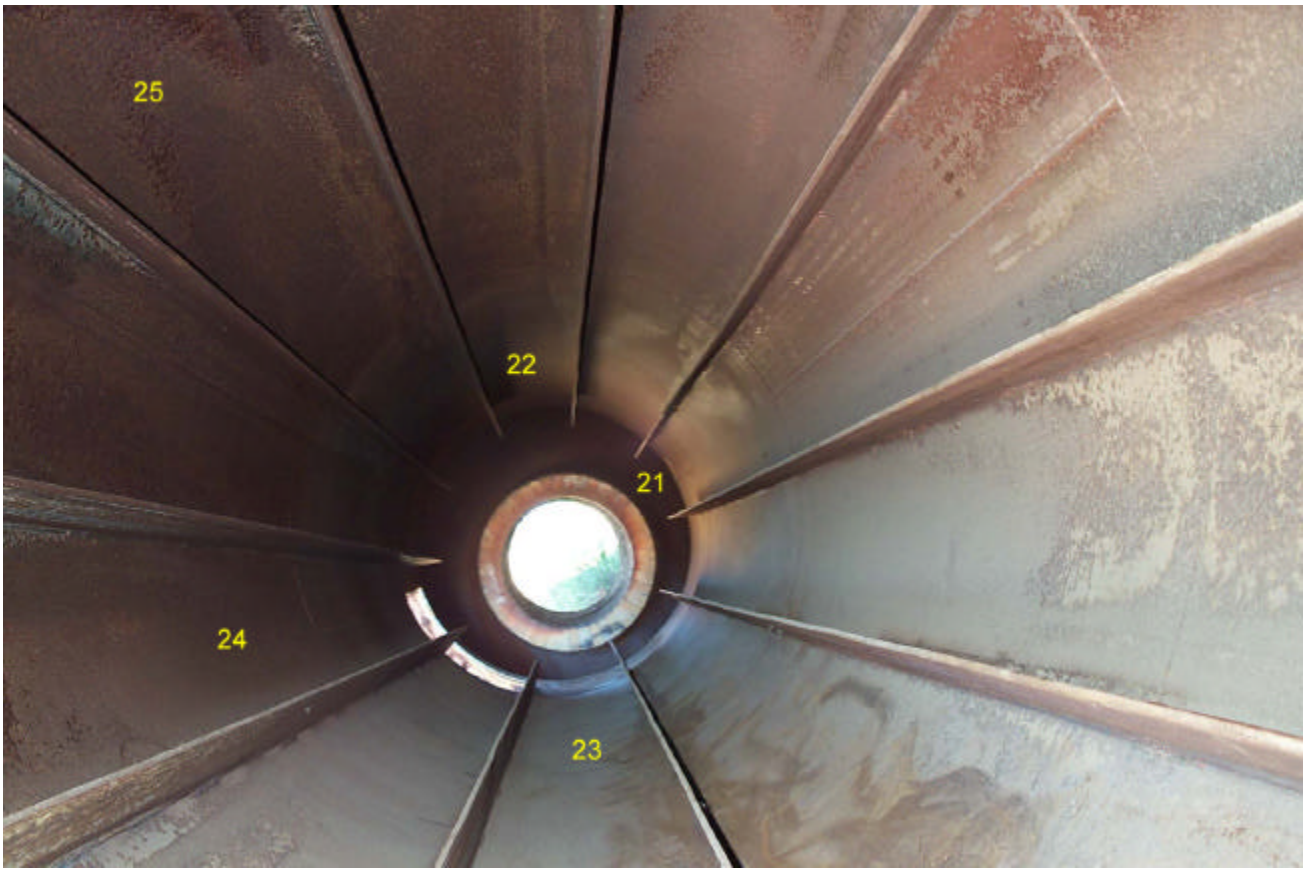
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Cylcone interior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	3	< MDA	5	< MDA
22	2	< MDA	17	75
23	0	< MDA	49	235
24	2	< MDA	18	80
25	4	< MDA	20	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Interior, cyclone end

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	8	< MDA	39	185
27	5	< MDA	75	365
28	8	< MDA	23	105
29	4	< MDA	101	495
30	9	< MDA	61	295

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

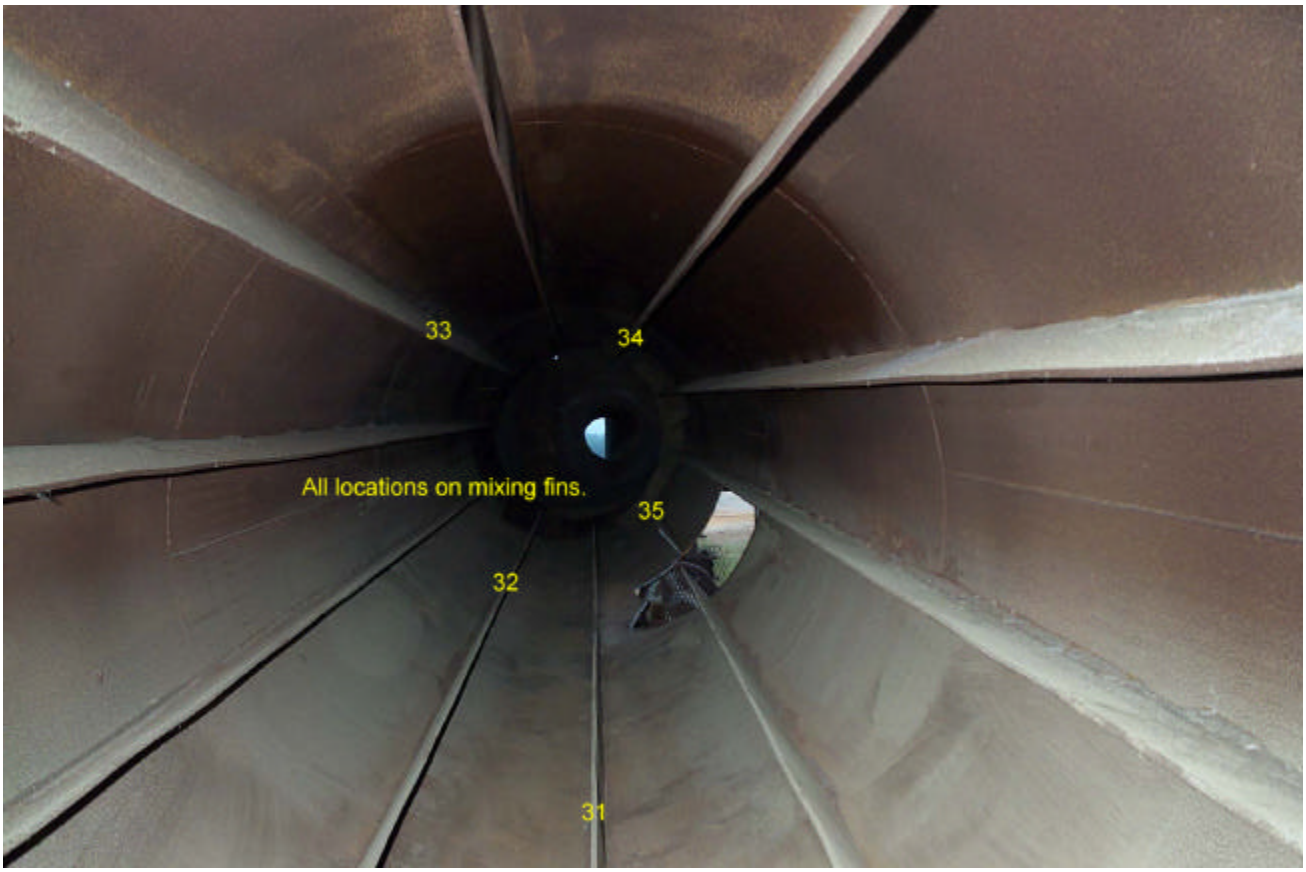
Serial Number: 134488

Survey date: 9/11/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Tube interior

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	12	50	6	< MDA
32	11	< MDA	65	315
33	18	80	23	105
34	11	< MDA	54	260
35	10	< MDA	24	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/12/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/12/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Dryer-fire bricks

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
36	10	< MDA	23	105
37	12	50	25	115
38	16	70	21	95
39	13	55	28	130
40	11	< MDA	24	110
41	11	< MDA	27	125
42	14	60	25	115

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 11/8/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 11/8/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 33 **Survey Unit:** Dryer-elevator

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
43	8	< MDA	88	430
44	2	< MDA	154	760
45	20	90	109	535
46	11	< MDA	133	655
47	11	< MDA	78	380
48	16	70	30	140
49	10	< MDA	9	< MDA
50	14	60	19	85
51	7	< MDA	16	70

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 34 **Survey Unit:** Flue Gas Scrubber, exterior view

Notes: Unaffected. The interior of the unit was contaminated beyond release limits and was not cleanable. The entire unit was taken down and sent to IUC.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)

Smear Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Scan and Scaler Info

Meter: N/A

Serial Number: N/A

Survey date:

MDA = dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, front view

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	11	50	16	75
2	3	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, rear view

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
3	1	< MDA	13	60
4	4	< MDA	33	160

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, interior right side from front

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	1	< MDA	10	45
6	4	< MDA	6	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, interior right side from rear

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	3	< MDA	5	< MDA
8	1	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

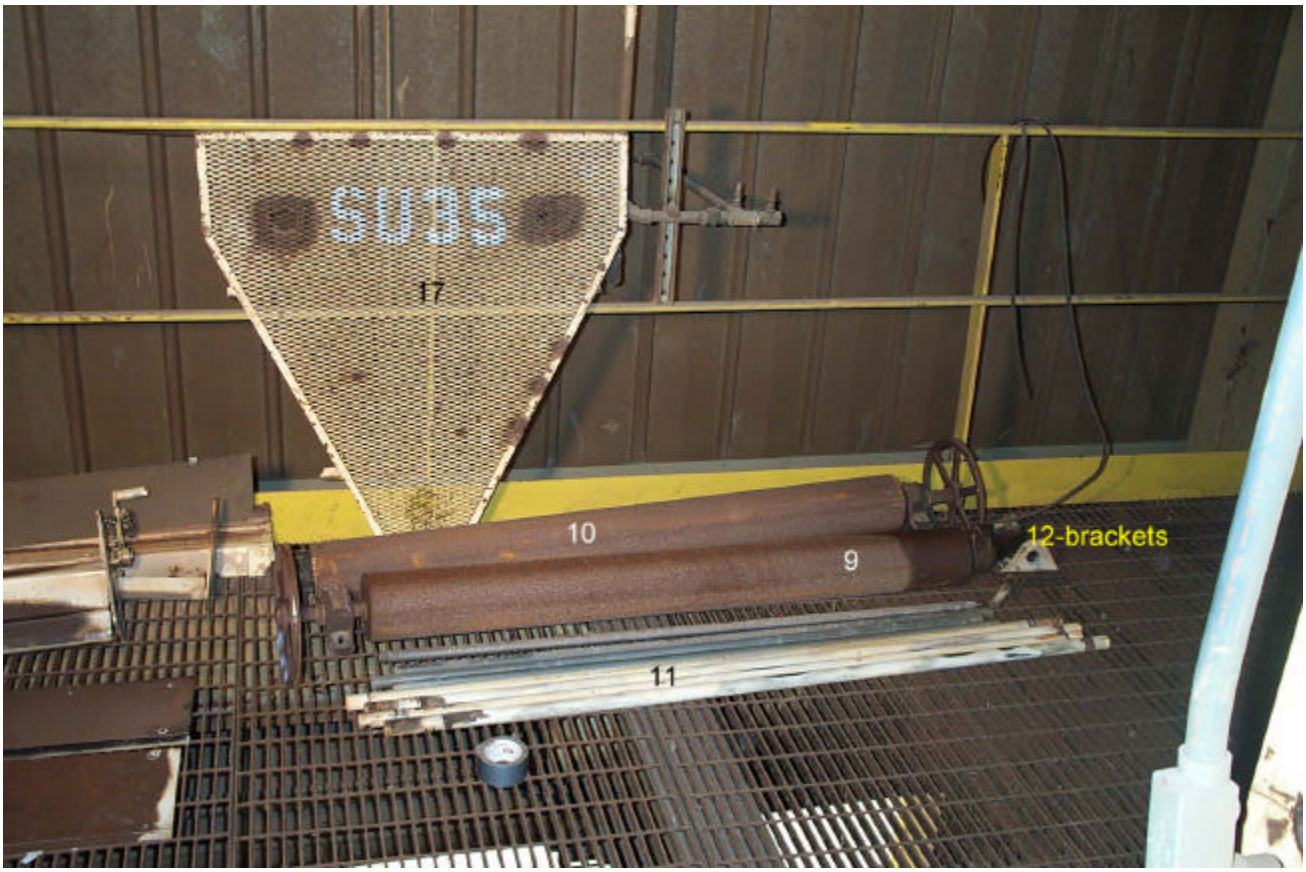
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, removed items

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	1	< MDA	20	95
10	3	< MDA	15	70
11	2	< MDA	17	80
12	12	55	67	330

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, removed items

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	5	< MDA	17	80
14	2	< MDA	11	50
15	5	< MDA	6	< MDA
16	5	< MDA	8	< MDA
17	10	45	24	115

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

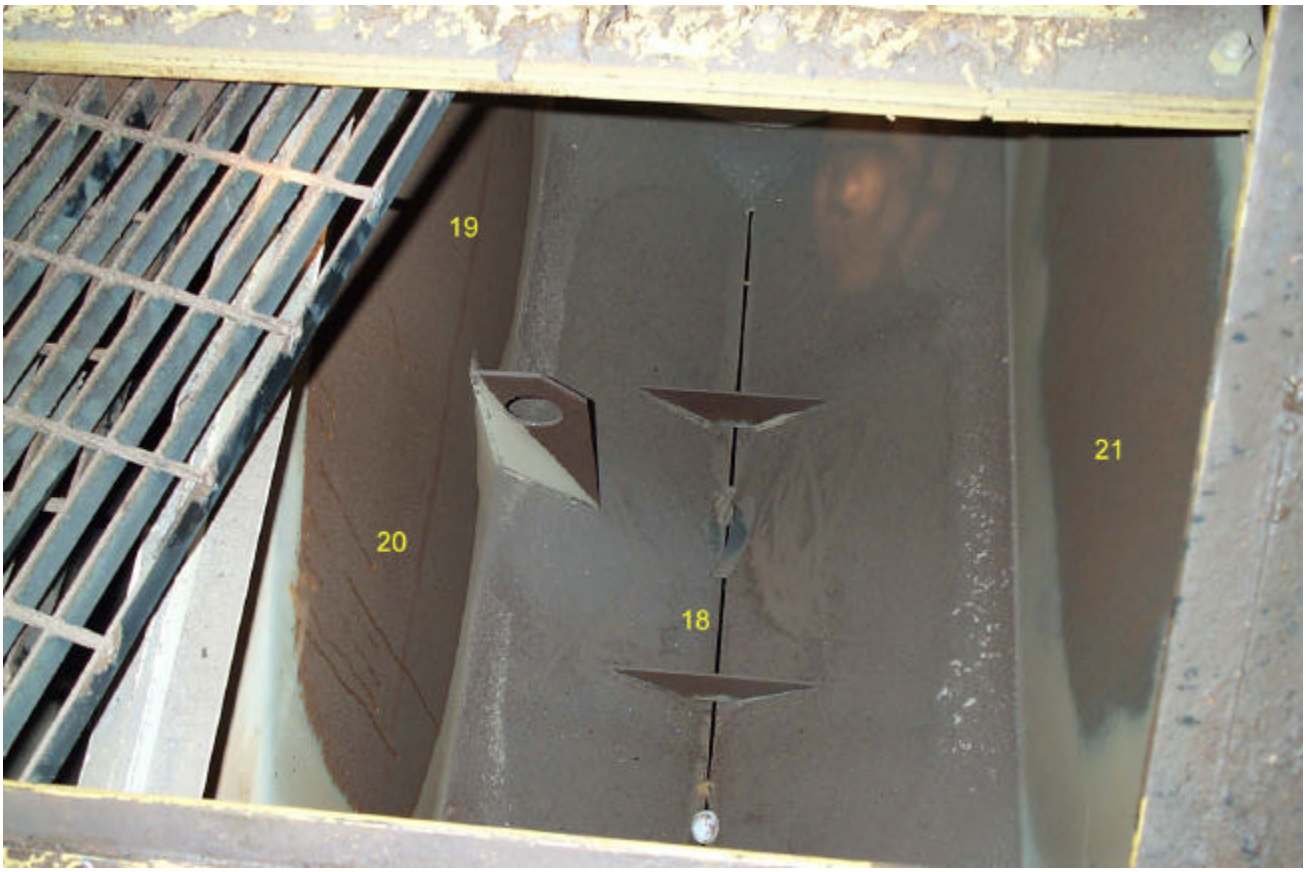
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, inside hopper, right side

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	13	60	72	355
19	5	< MDA	112	555
20	7	< MDA	128	635
21	9	40	69	340

Smear Info

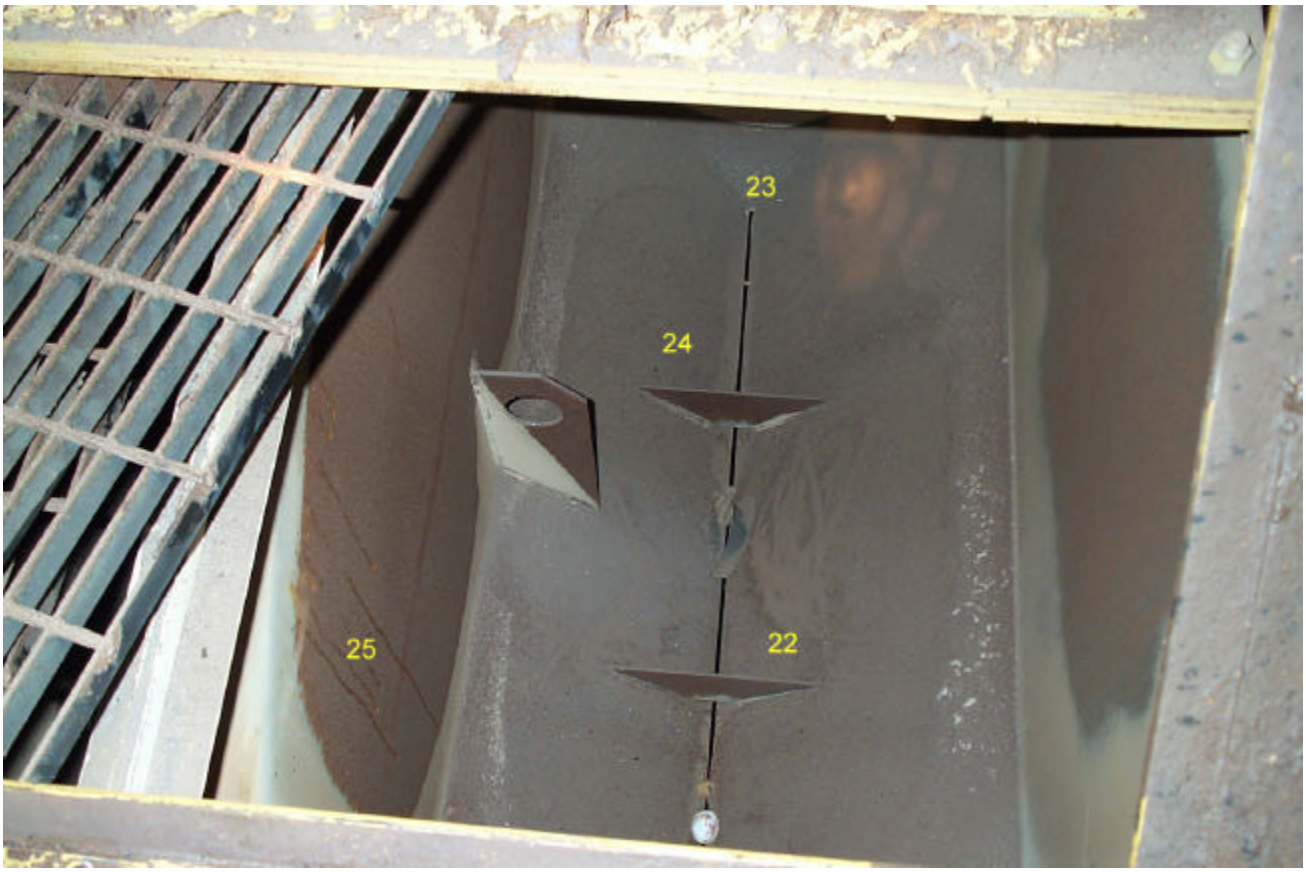
Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/25/01
MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/25/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, inside hopper, left side

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
22	17	80	84	415
23	11	50	68	335
24	4	< MDA	108	535
25	4	< MDA	32	155

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 35 **Survey Unit:** Rougher High Tension Separators, inside circular opening

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	6	< MDA	43	210
27	11	50	32	155

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - front stripped

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	3	< MDA
2	5	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

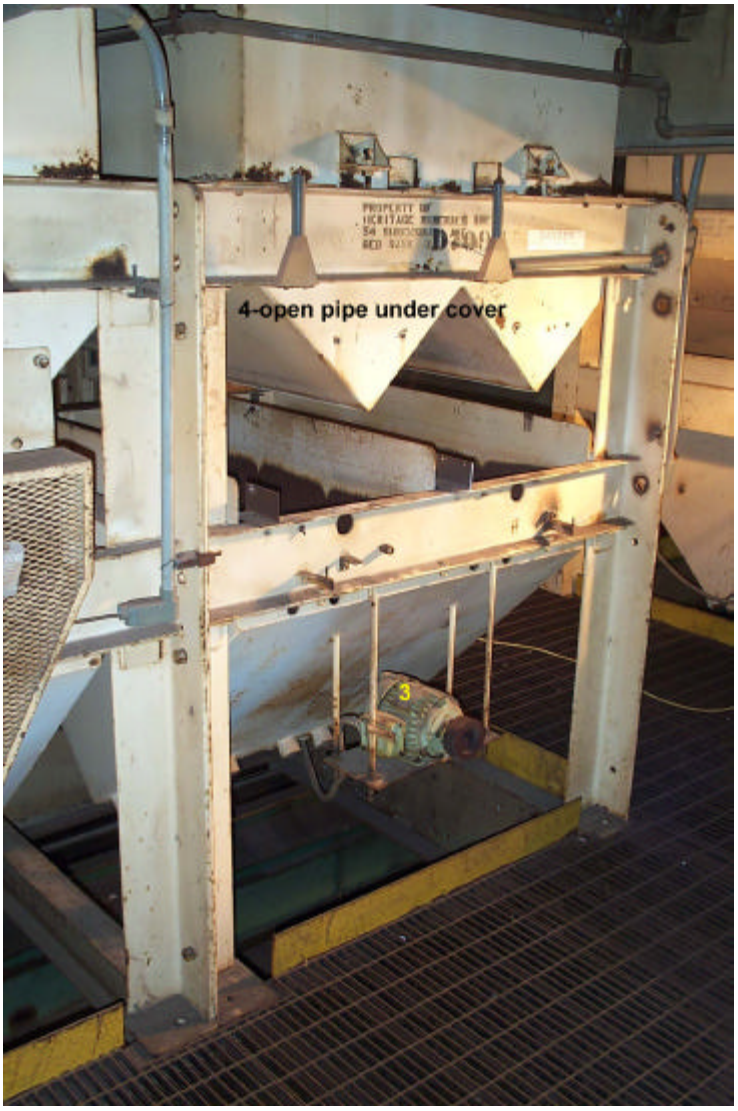
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - rear stripped

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
3	9	40	12	55
4	3	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Interior right side from rear

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	3	< MDA	12	55
6	4	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Interior right side from front

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	5	< MDA	9	40
8	6	< MDA	16	75

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

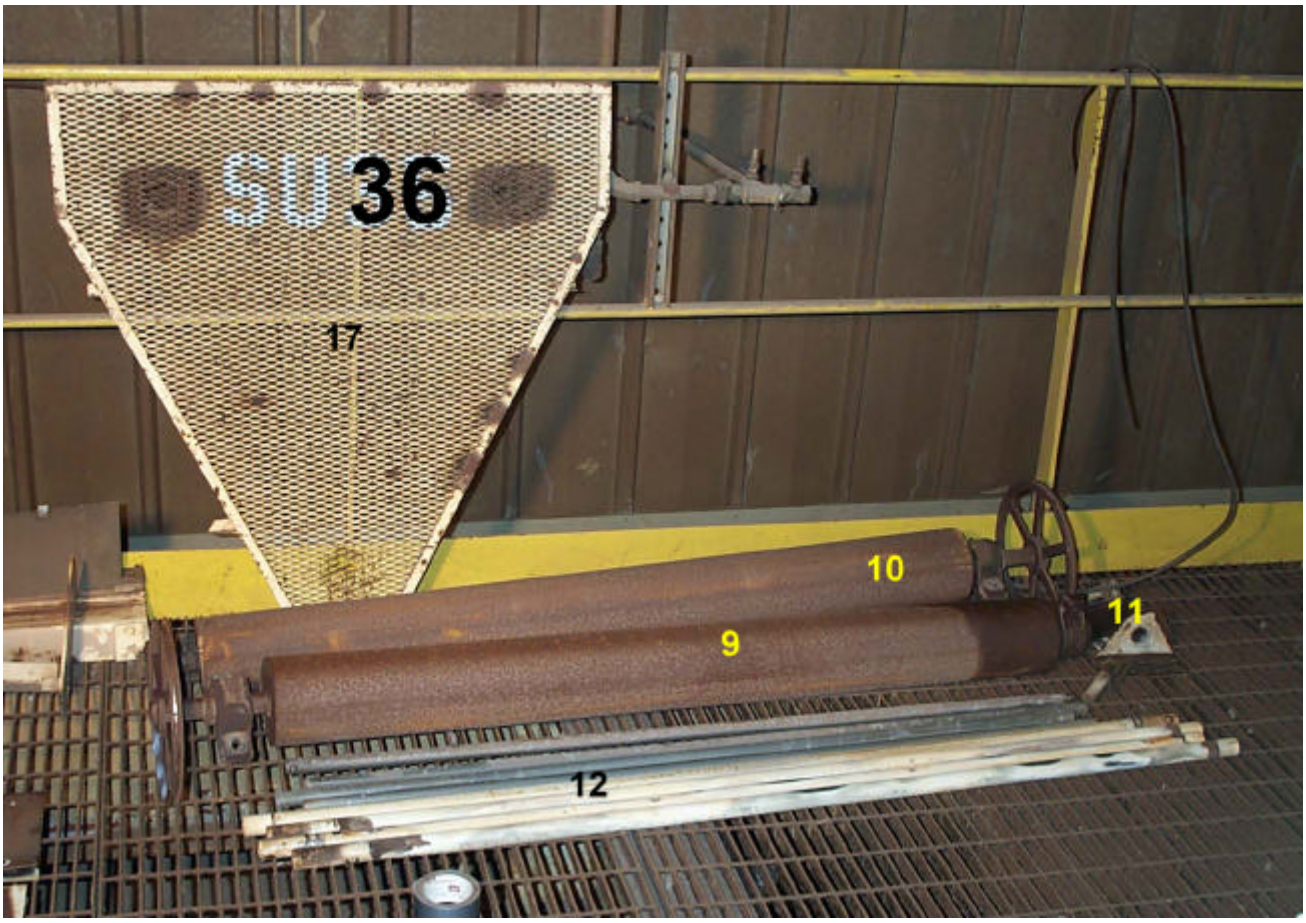
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Miscellaneous removed items

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	3	< MDA	17	80
10	2	< MDA	58	285
11	2	< MDA	52	255
12	9	40	69	340

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

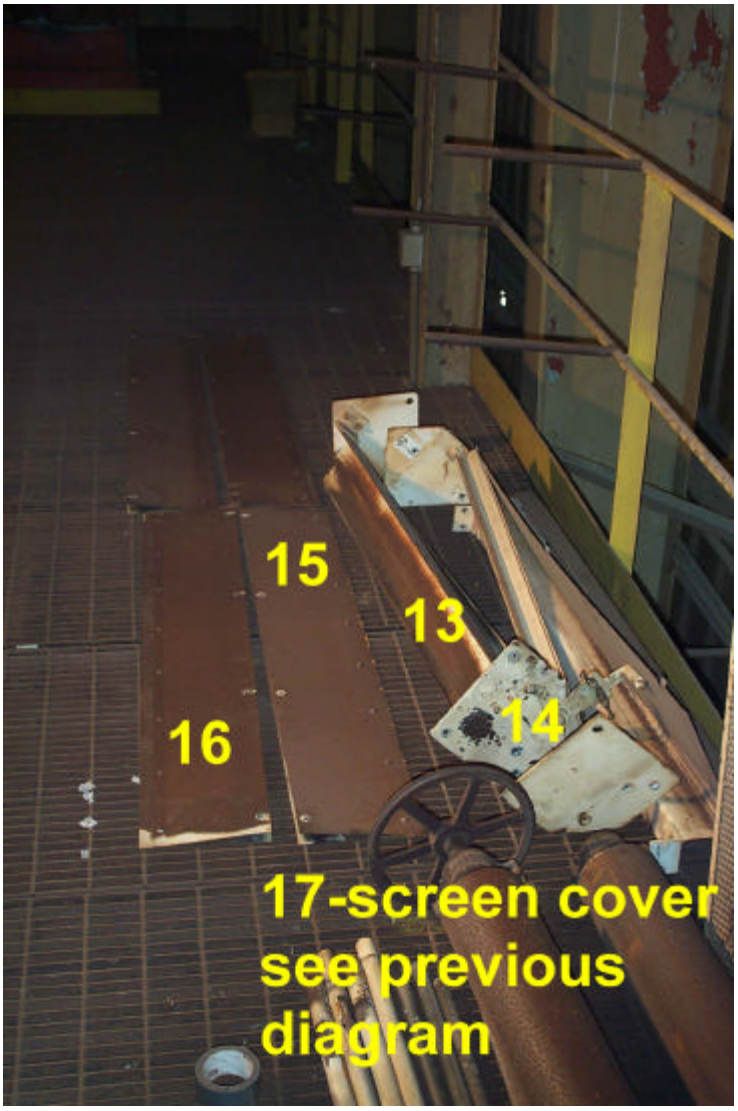
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Miscellaneous removed items

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	0	< MDA	8	< MDA
14	1	< MDA	7	< MDA
15	4	< MDA	7	< MDA
16	4	< MDA	16	75
17	5	< MDA	32	155

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

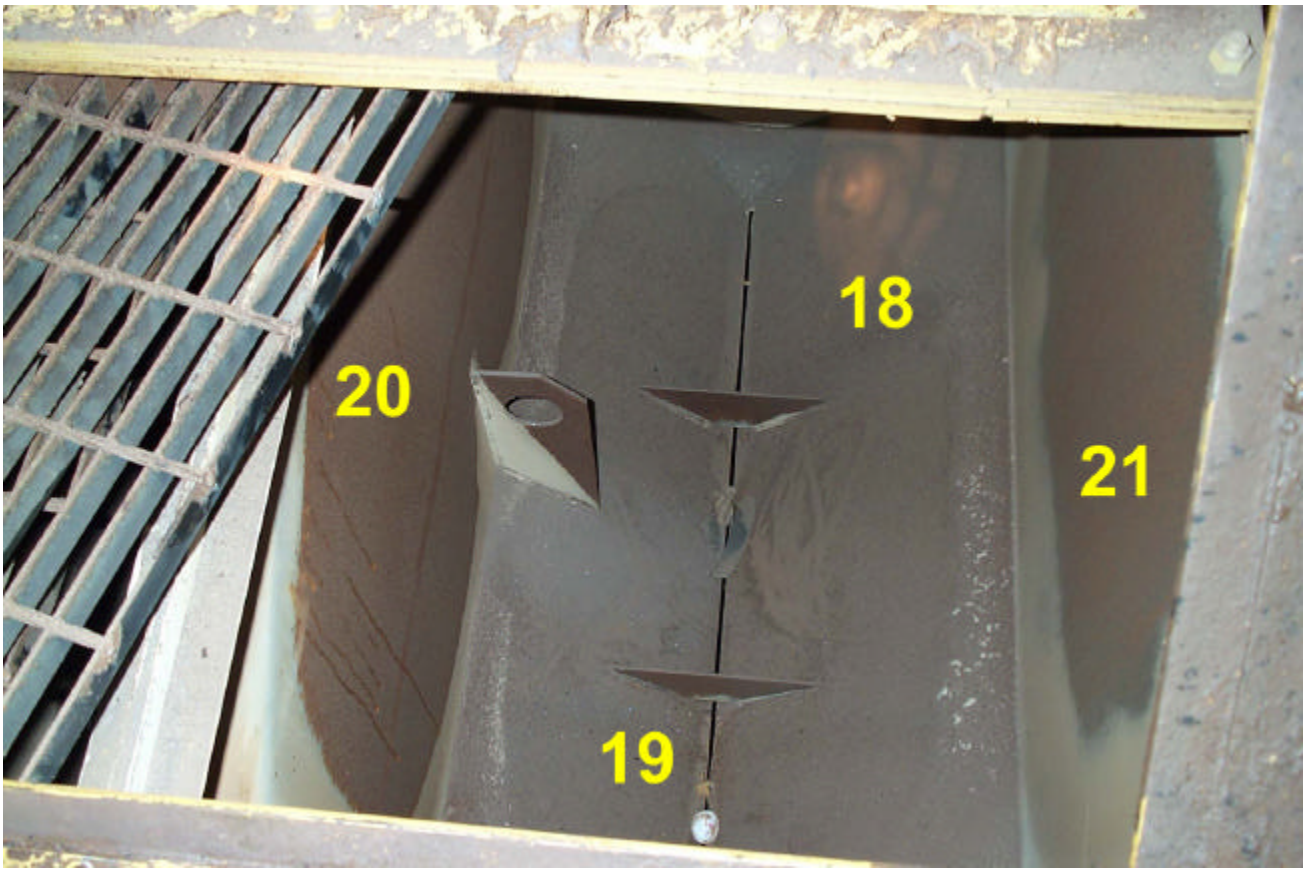
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Inside hopper, left

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	6	< MDA	81	400
19	8	< MDA	115	570
20	6	< MDA	16	75
21	8	< MDA	19	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

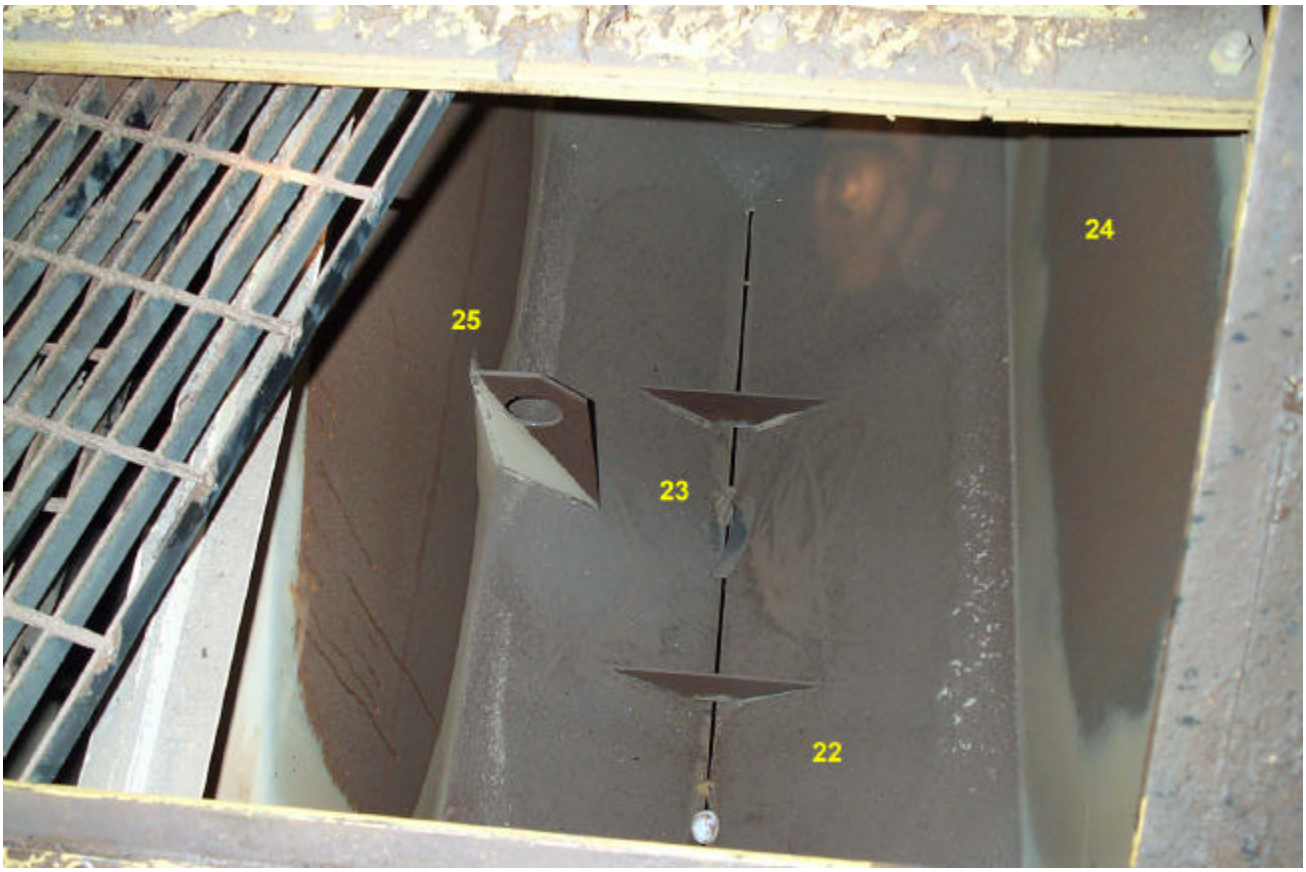
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Inside hopper, right

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
22	6	< MDA	93	460
23	2	< MDA	100	495
24	6	< MDA	20	95
25	3	< MDA	18	85

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/25/01
MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 134488
Survey date: 8/25/01
MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Inside circular opening

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	6	< MDA	43	210
27	7	< MDA	31	150

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

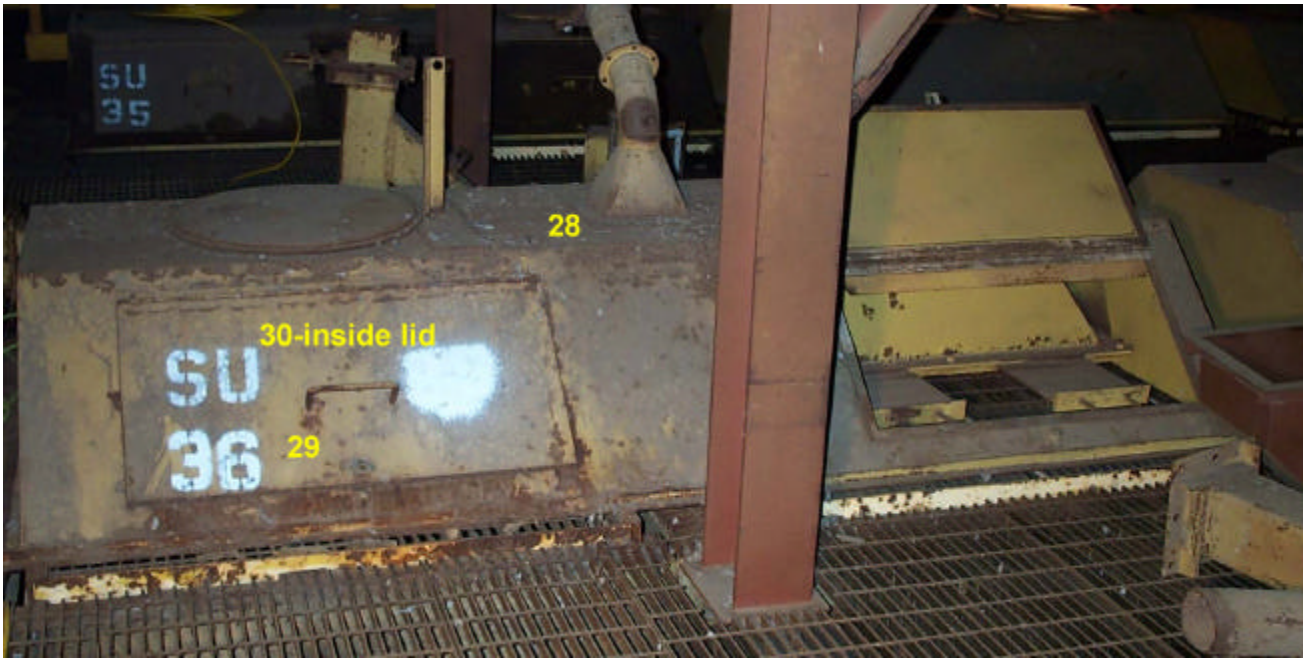
Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators - Top

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
28	7	< MDA	25	120
29	4	< MDA	36	175
30	12	55	54	265

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/25/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 36 **Survey Unit:** Cleaner High Tension Separators-elevator

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	23	105	34	160
32	16	70	21	95
33	26	120	80	390
34	20	90	12	50
35	19	85	18	80
36	28	130	118	580
37	5	< MDA	9	< MDA
38	6	< MDA	13	55

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, inside left from rear

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	16	65	38	175
2	18	75	24	105
3	16	65	39	180
4	17	70	41	190
5	7	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, bottom

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	9	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

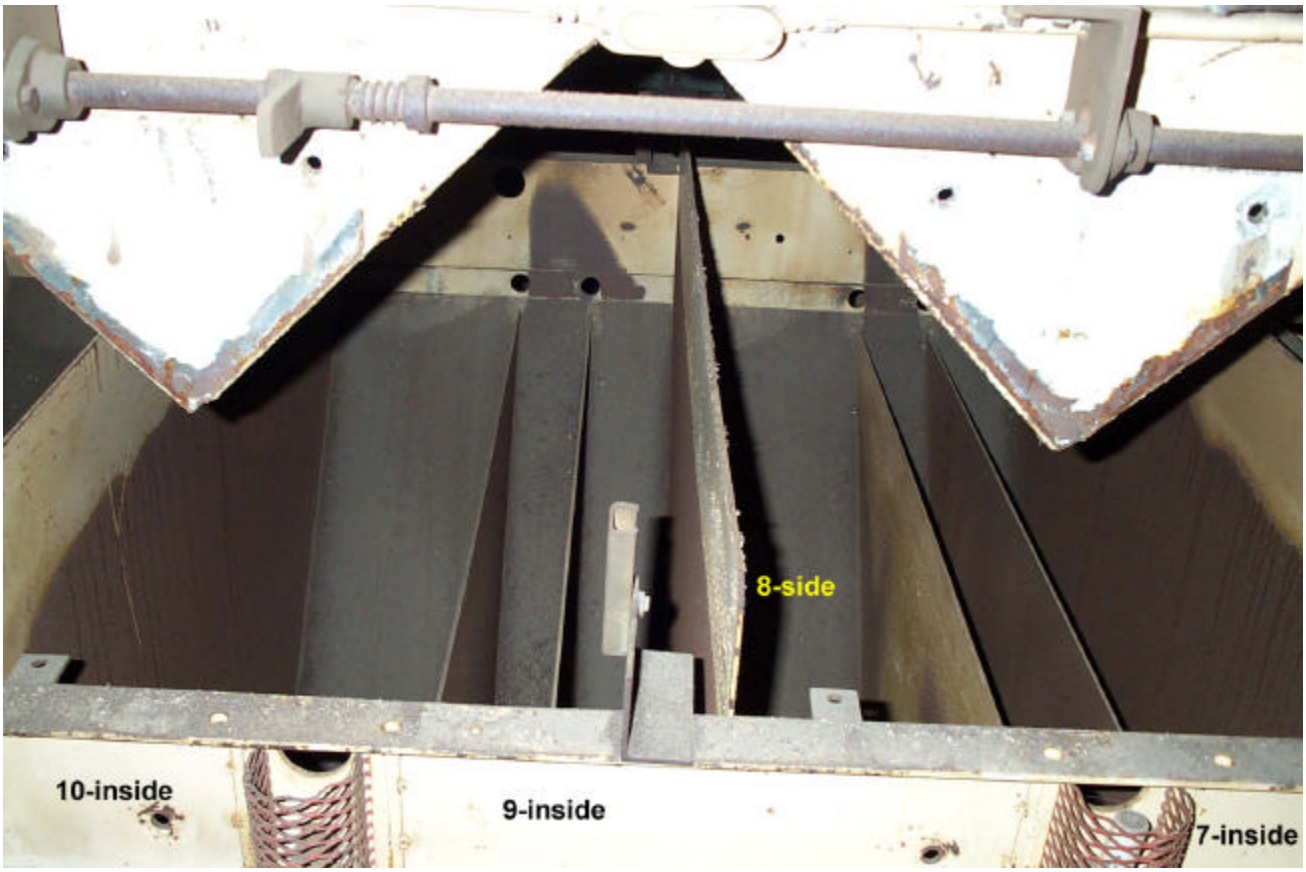
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, inside right from rear

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	10	< MDA	22	95
8	9	< MDA	33	150
9	9	< MDA	21	90
10	12	< MDA	29	130

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, rear

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	10	< MDA	31	140
12	10	< MDA	30	135
13	9	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

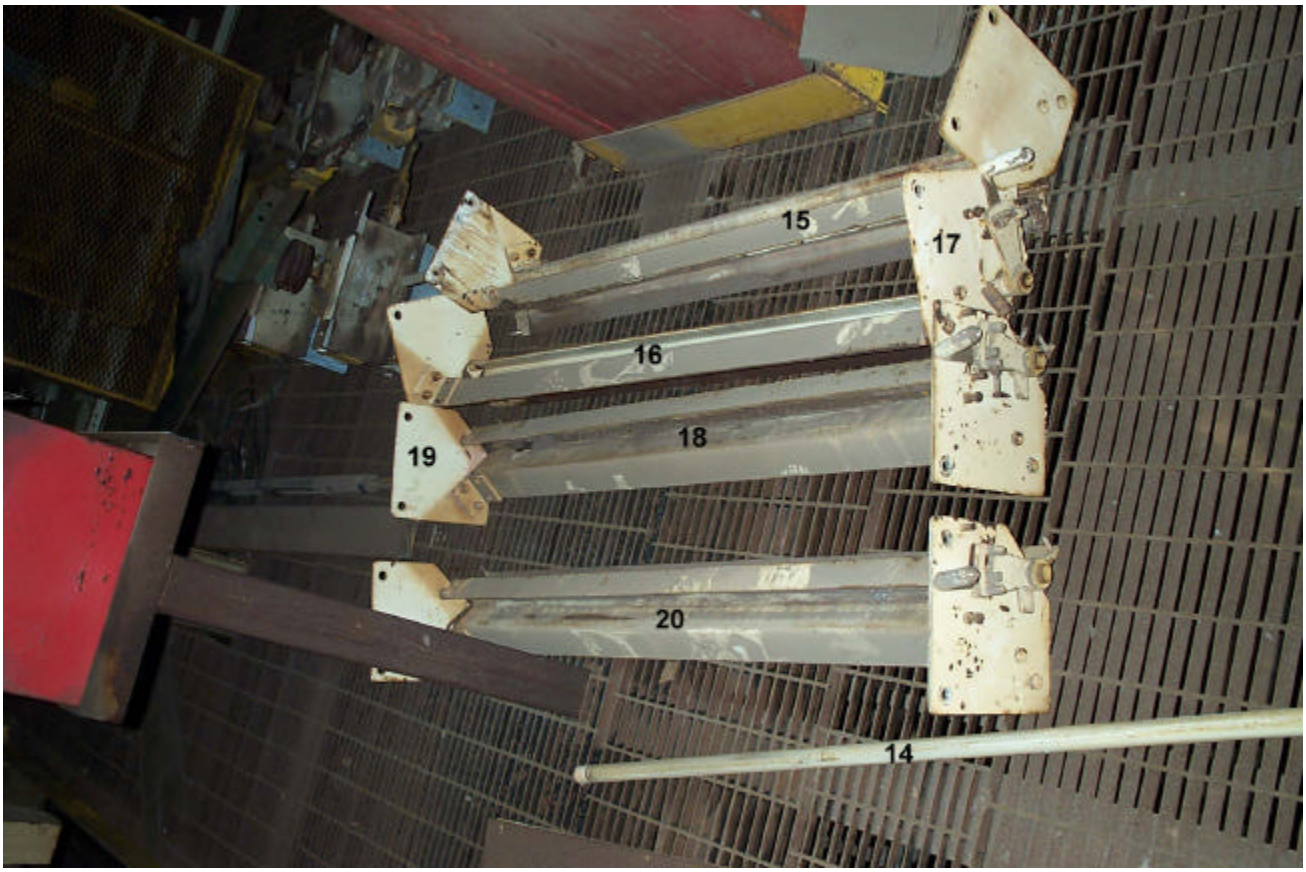
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, rear

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	7	< MDA	21	90
15	7	< MDA	24	105
16	7	< MDA	21	90
17	6	< MDA	24	105
18	6	< MDA	26	115
19	8	< MDA	22	95
20	7	< MDA	28	125

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

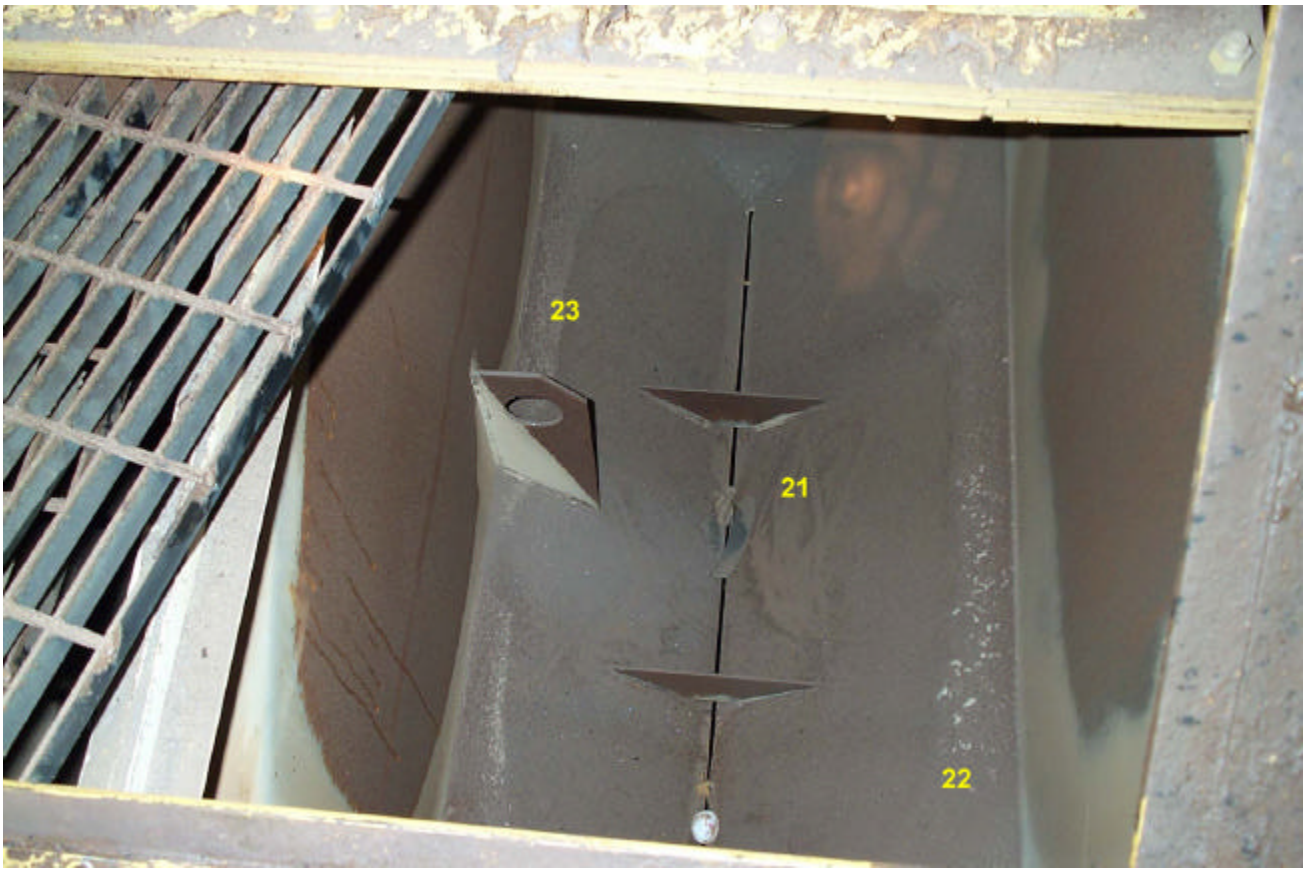
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, right hopper

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	9	< MDA	39	180
15	12	< MDA	39	180
16	6	< MDA	36	165

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

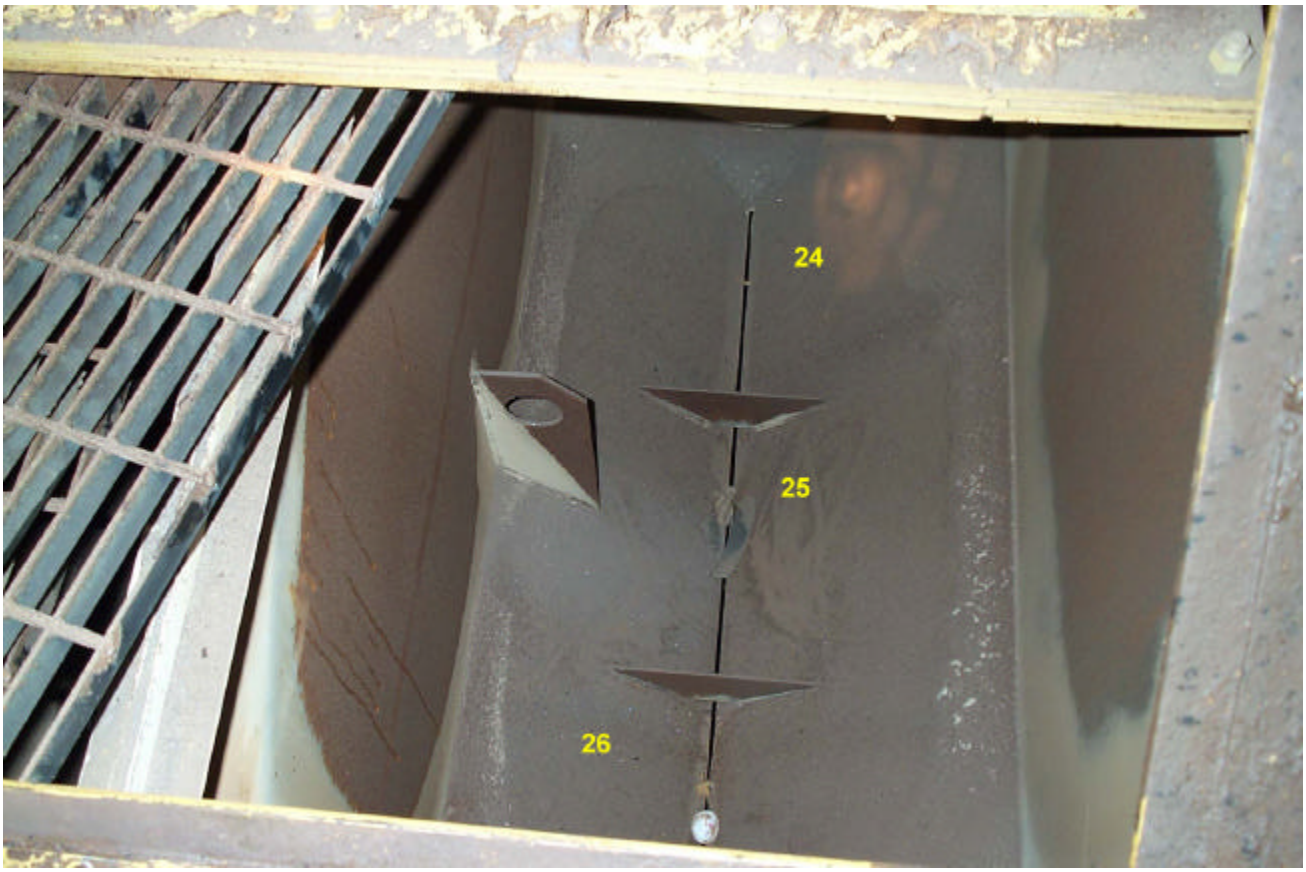
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, left hopper

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
24	13	< MDA	79	380
25	12	< MDA	53	250
26	15	60	65	310

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

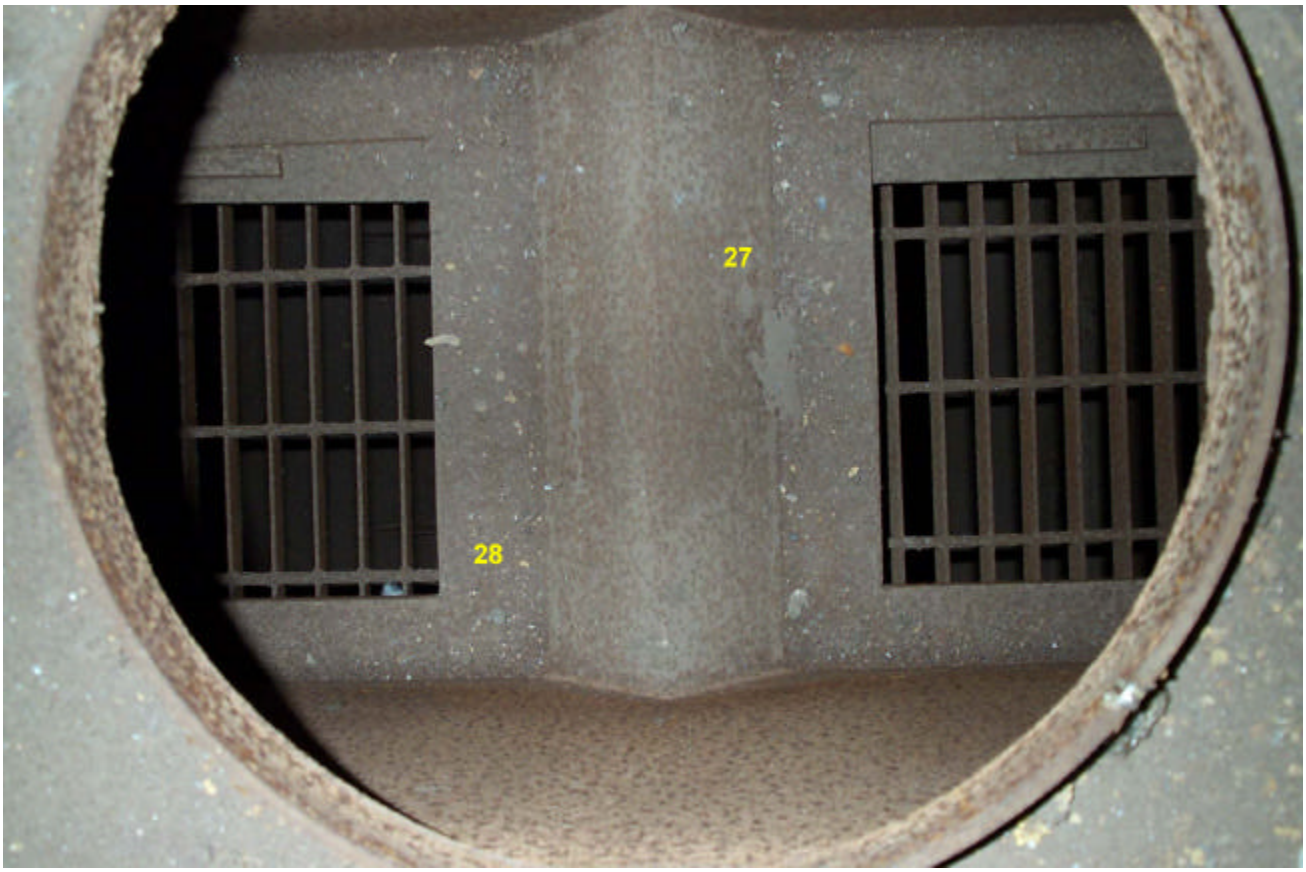
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, circular opening

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	9	< MDA	17	70
28	7	< MDA	25	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

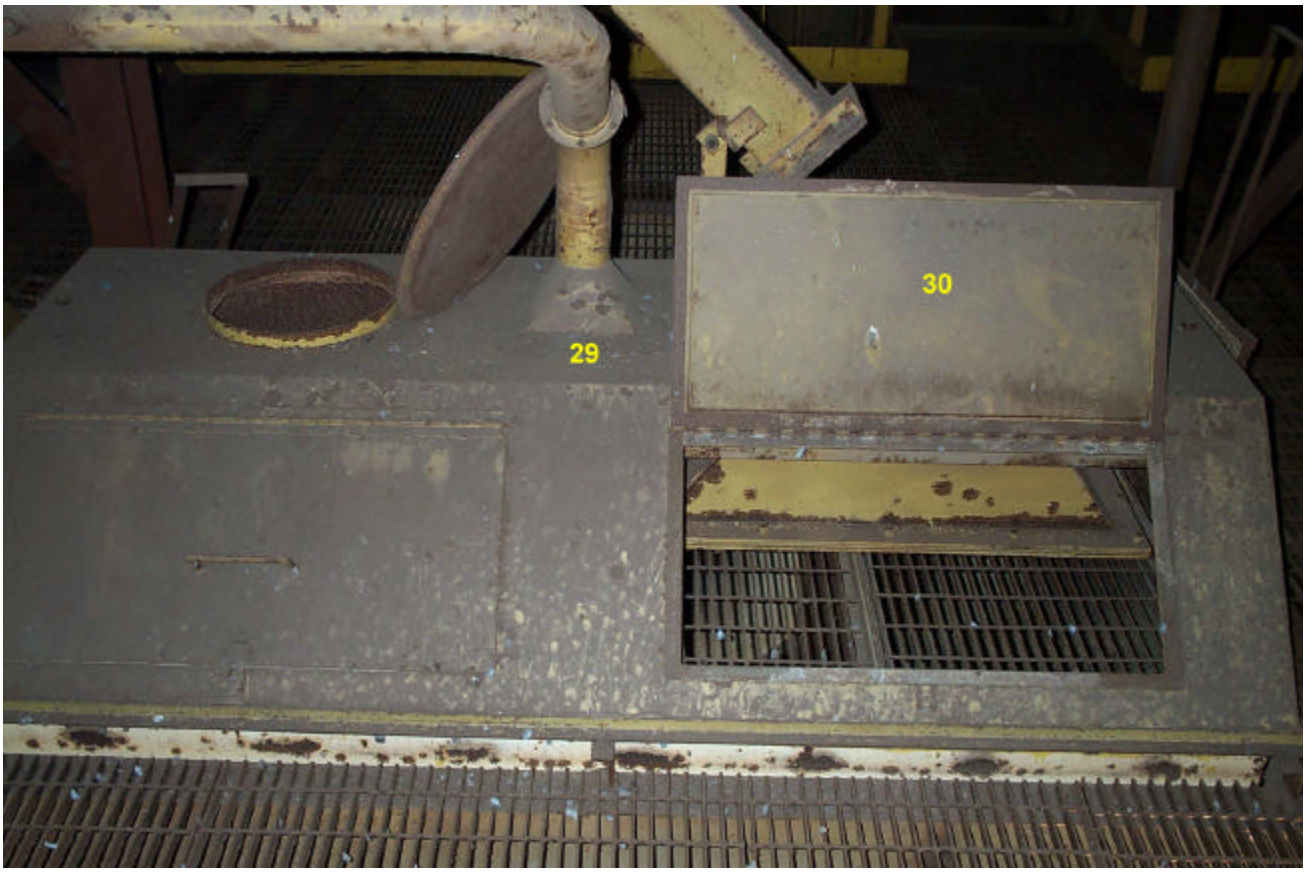
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, left hopper

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
29	13	< MDA	47	220
30	10	< MDA	54	255

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 37 **Survey Unit:** Re-Cleaner High Tension Separator, elevator

Notes: Affected. #31 thru #35 taken on cups, every 10 cups; #36 is on the belt; #37 inside wall, lower level; #38 floor of elevator; #39 wall second level.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	19	85	199	985
32	15	65	139	685
33	27	125	163	805
34	13	55	128	630
35	9	< MDA	81	395
36	12	50	10	< MDA
37	22	100	104	510
38	5	< MDA	100	490
39	13	55	57	275

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

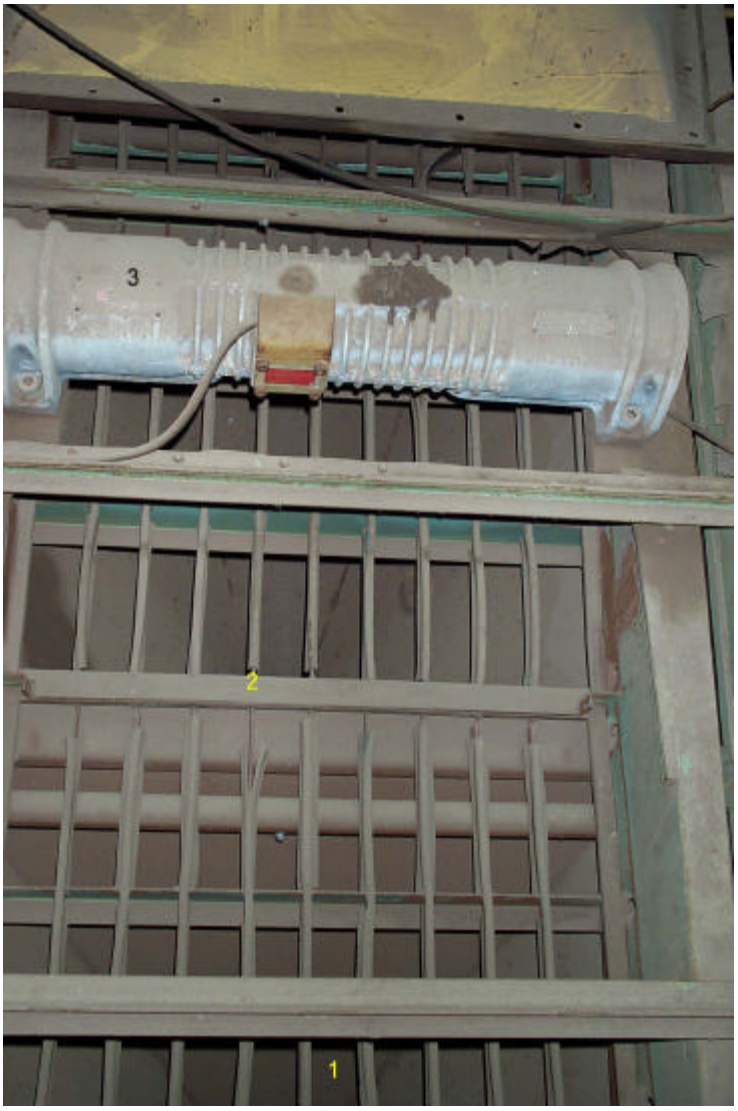
Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Hopper grate

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	35	170	28	135
2	10	45	50	245
3	20	95	20	95

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

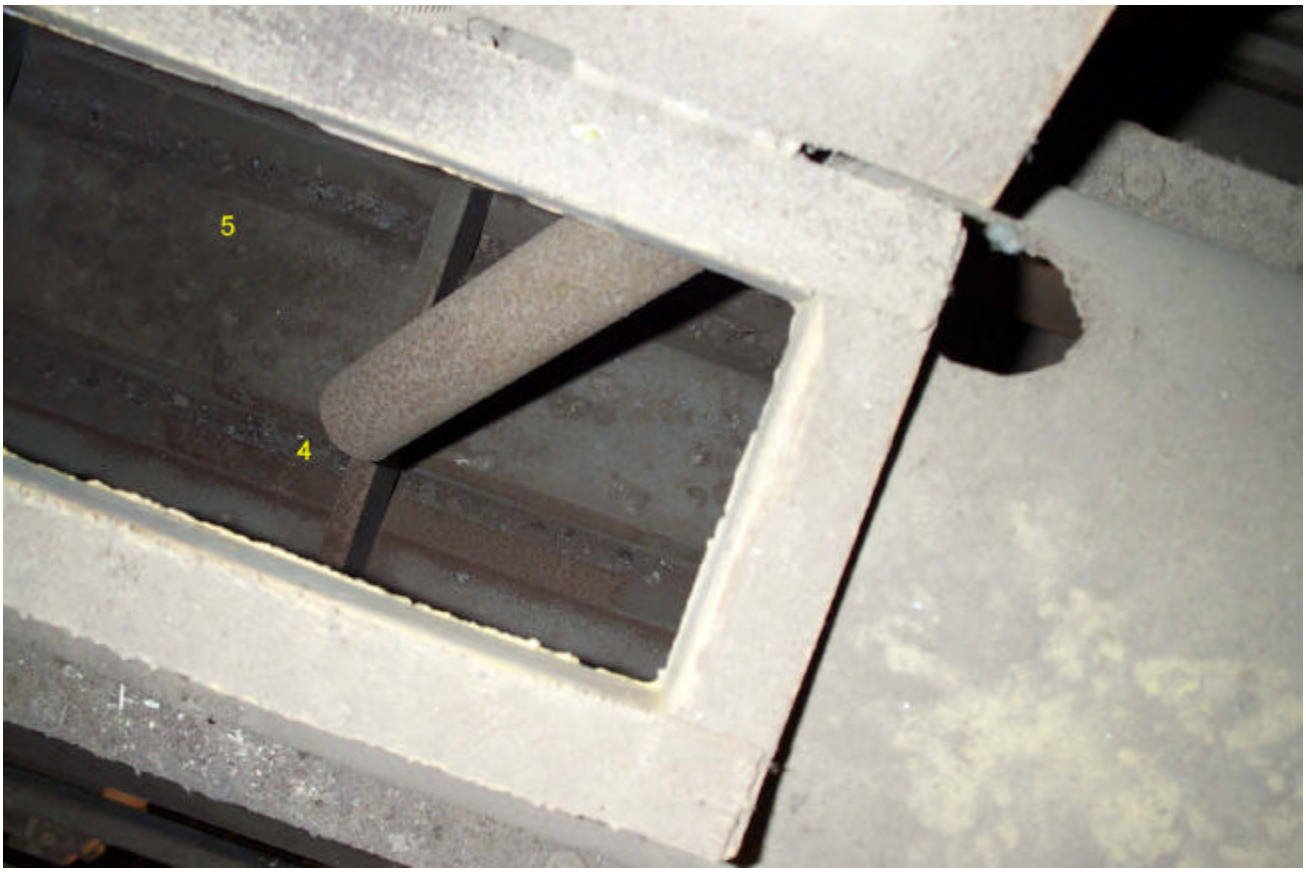
Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Inside opening on top

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
4	5	< MDA	34	165
5	15	70	9	40

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Top of Unit

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	4	< MDA	27	130
7	1	< MDA	8	< MDA
8	2	< MDA	9	40

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Upper section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	4	< MDA	22	105
10	2	< MDA	16	75
11	3	< MDA	16	75
12	1	< MDA	20	95
13	1	< MDA	13	60

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

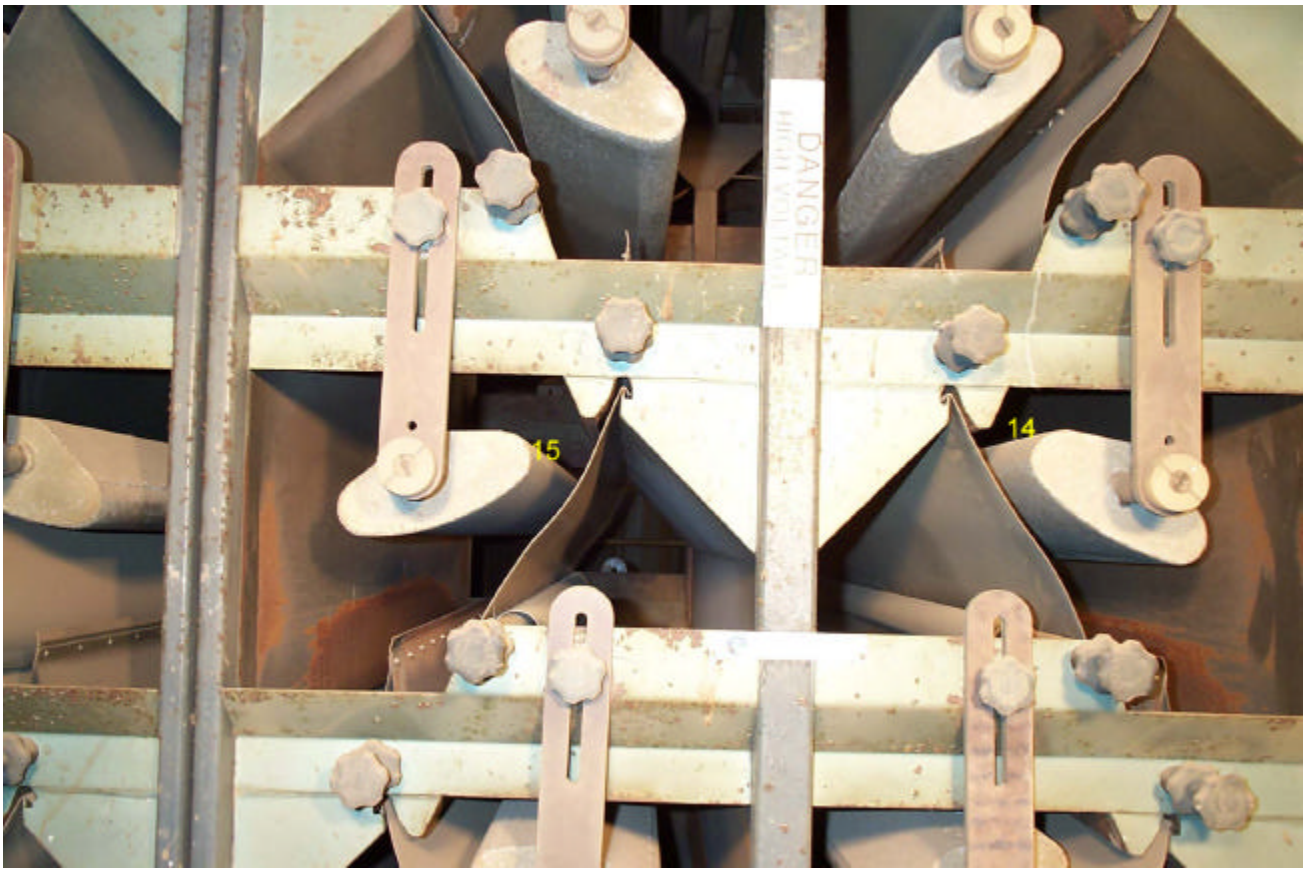
Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Mid section

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
14	2	< MDA	14	65
15	2	< MDA	11	50

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

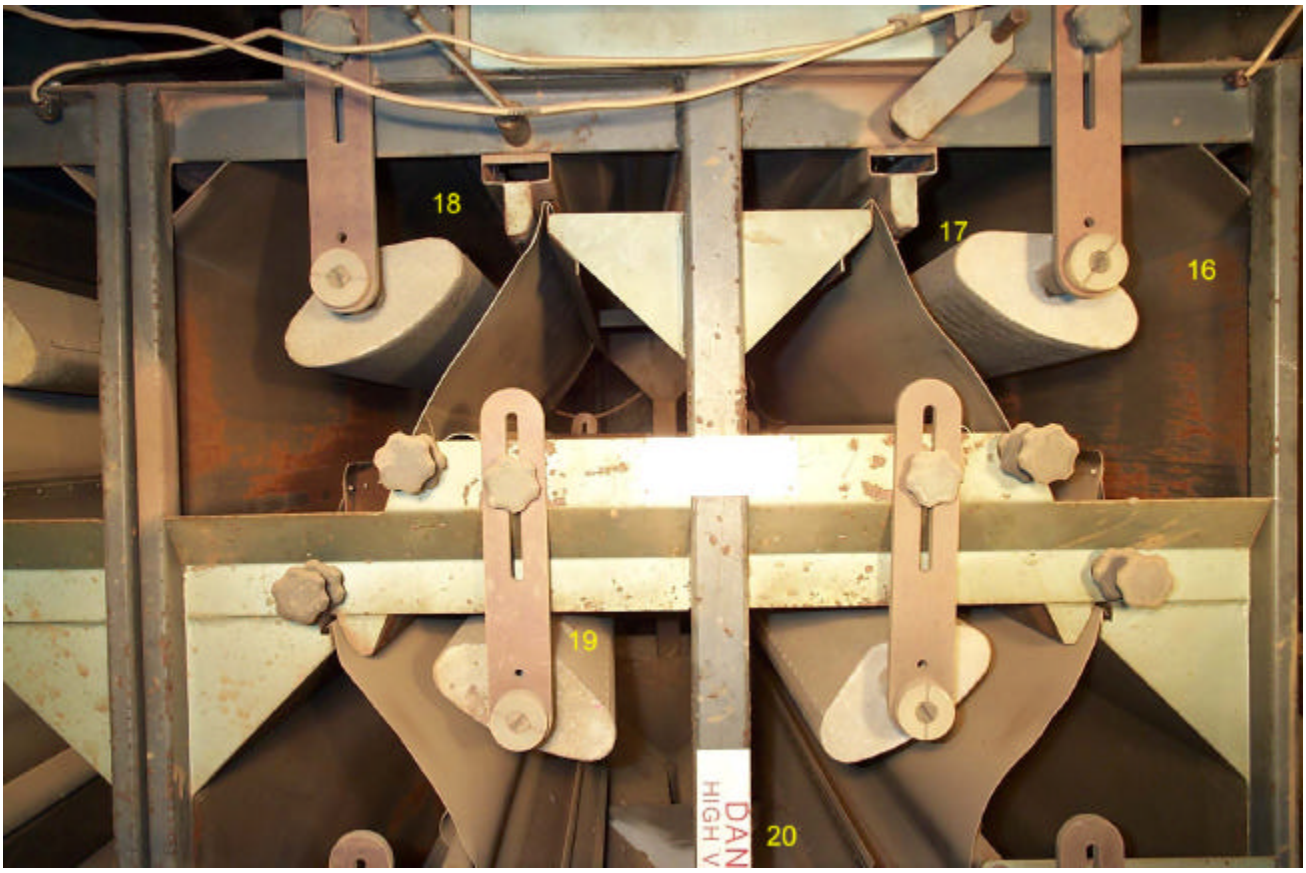
Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Lower section

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
16	4	< MDA	6	< MDA
17	6	< MDA	37	180
18	2	< MDA	44	215
19	2	< MDA	35	170
20	4	< MDA	35	170

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Full front view

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	16	75
22	1	< MDA	18	85
23	5	< MDA	19	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Full front view

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
24	4	< MDA	19	90
25	2	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

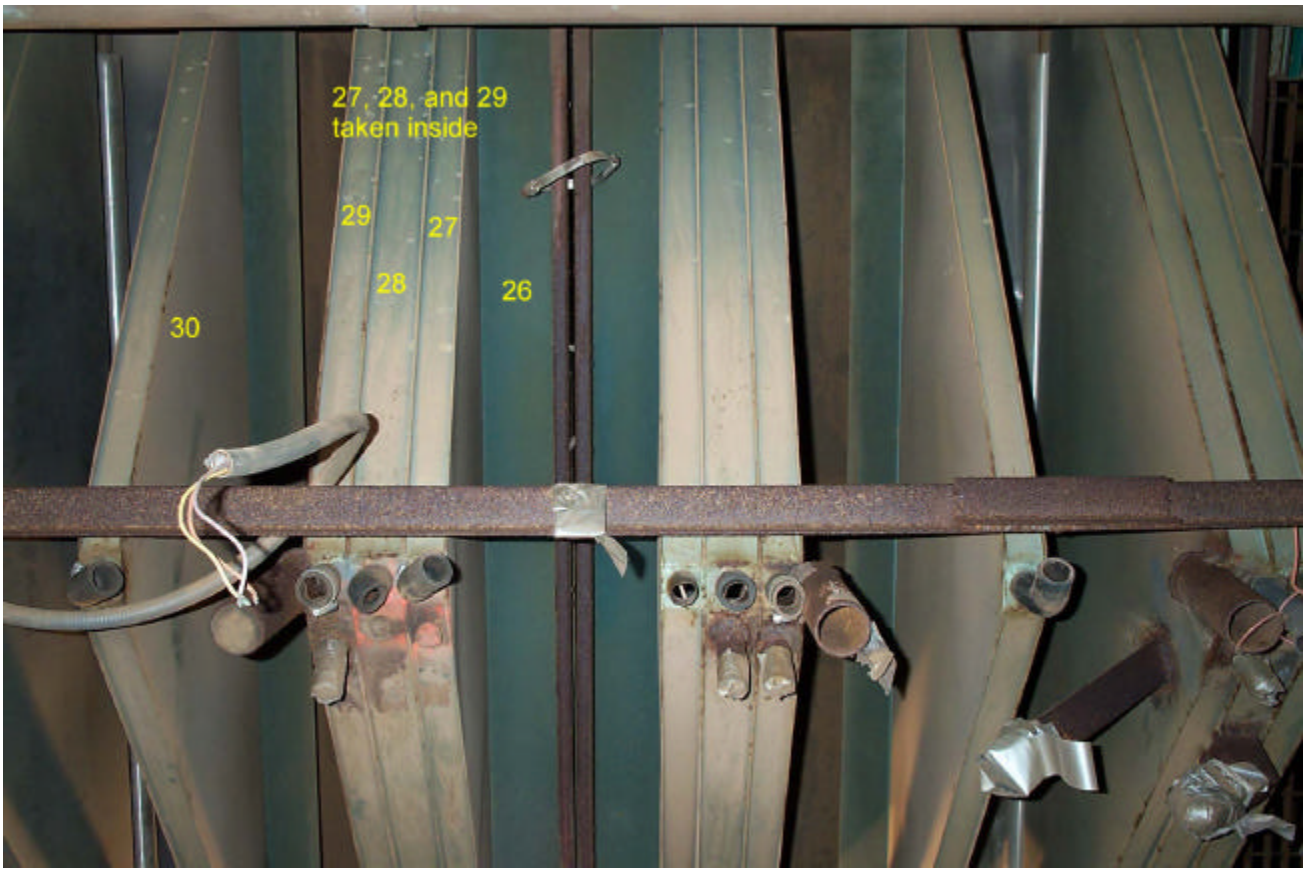
Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separator-Bottom

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	4	< MDA	23	110
27	3	< MDA	4	< MDA
28	1	< MDA	6	< MDA
29	2	< MDA	5	< MDA
30	3	< MDA	3	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: 38 **Survey Unit:** Plate Separators, elevator to Zircon Magnetic Separator (42)

Notes: Affected. #31 thru #35 taken on cups, every 10 cups; #36 is on the belt; #37 inside wall, lower level; #38 floor of elevator; #39 wall second level.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	15	65	98	480
32	14	60	118	580
33	14	60	104	510
34	21	95	116	570
35	20	90	80	390
36	17	75	59	285
37	14	60	22	100
38	17	75	61	295
39	11	< MDA	24	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, hopper

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	17	70
2	5	< MDA	13	< MDA
3	2	< MDA	18	75
4	1	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, hopper

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	2	< MDA	5	< MDA
6	2	< MDA	4	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

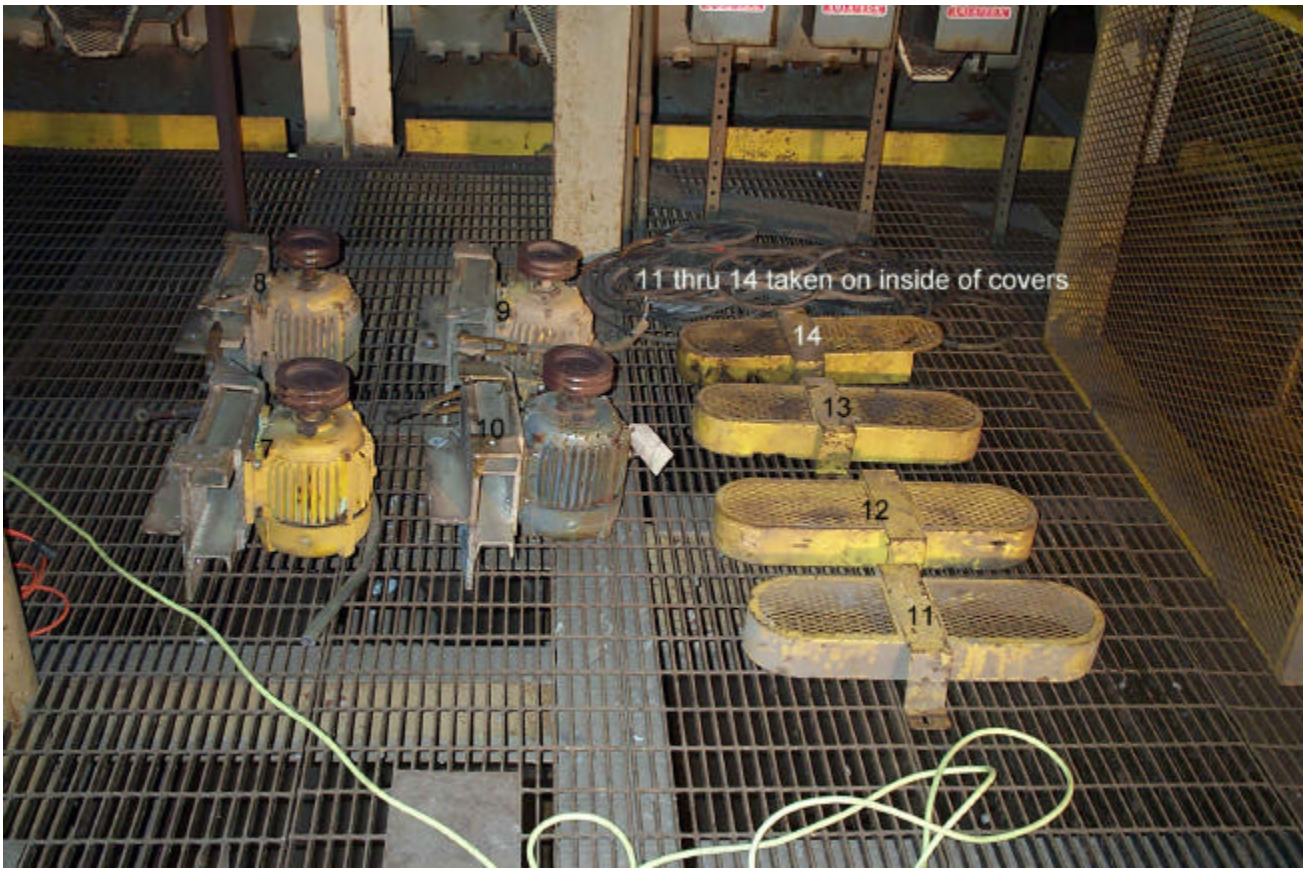
Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, magnetic drives and covers

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	5	< MDA	8	< MDA
8	3	< MDA	11	< MDA
9	5	< MDA	27	120
10	3	< MDA	21	90
11	3	< MDA	9	< MDA
12	4	< MDA	7	< MDA
13	1	< MDA	17	70
14	3	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, rear panel

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	4	< MDA	17	70
16	1	< MDA	24	105

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, side panels

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
17	4	< MDA	12	< MDA
18	5	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

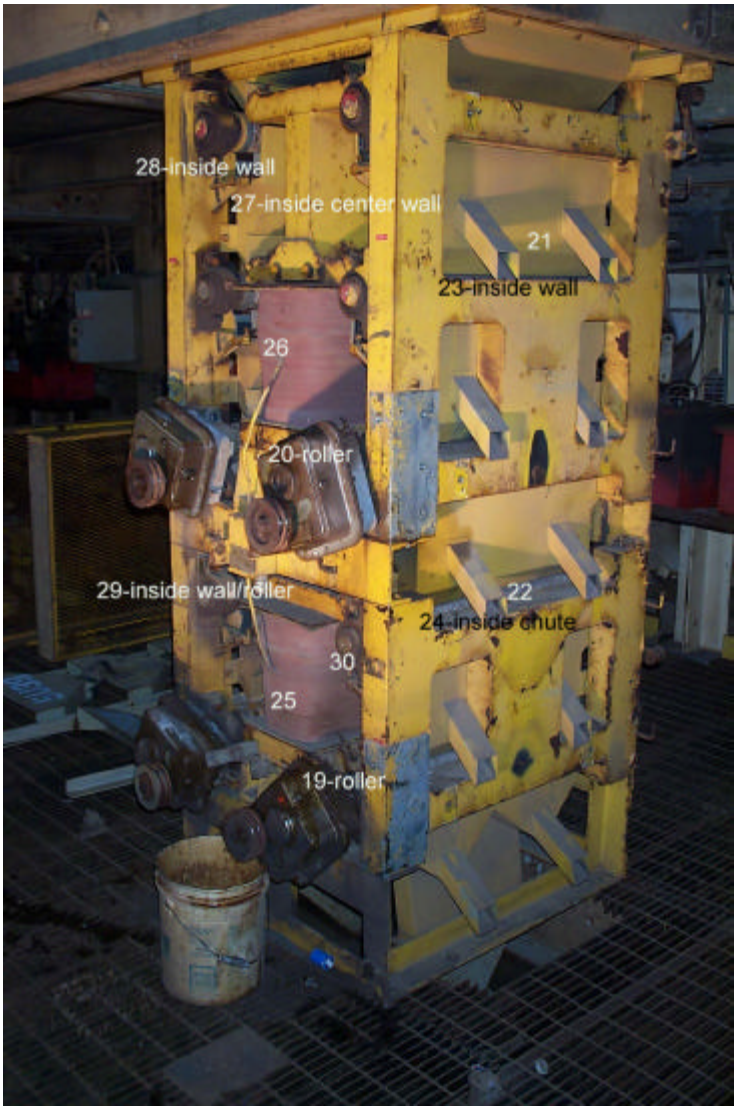
Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, stripped view

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
19	2	< MDA	5	< MDA
20	2	< MDA	16	65
21	5	< MDA	19	80
22	7	< MDA	20	85
23	5	< MDA	12	< MDA
24	5	< MDA	24	105
25	1	< MDA	10	< MDA
26	4	< MDA	15	60
27	2	< MDA	17	70
28	4	< MDA	21	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

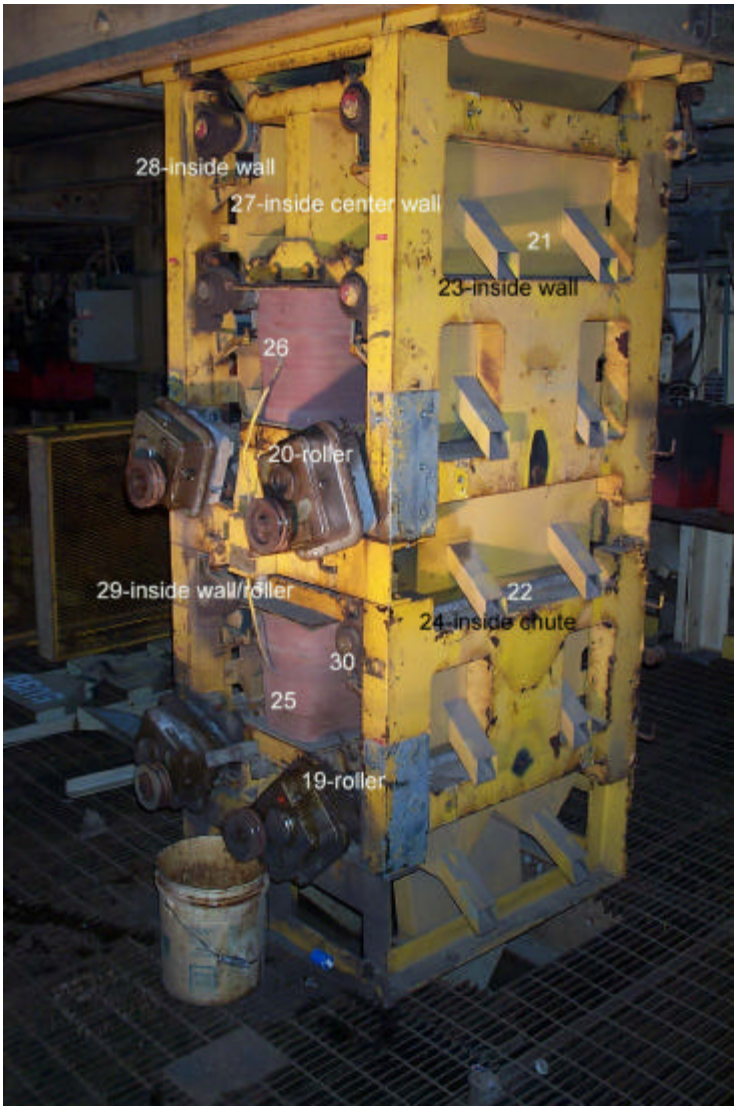
Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separator, stripped view

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
29	3	< MDA	16	65
30	2	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 39 **Survey Unit:** Leucoxene Magnetic Separators, elevator

Notes: Affected. #31 thru #35 taken on cups, every 10 cups; #36 is on the belt; #37 inside wall, lower level; #38 floor of elevator; #39 wall second level.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	8	< MDA	76	370
32	33	155	65	315
33	4	< MDA	16	70
34	9	< MDA	18	80
35	7	< MDA	18	80
36	6	< MDA	14	60
37	10	< MDA	58	280
38	6	< MDA	24	110
39	10	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

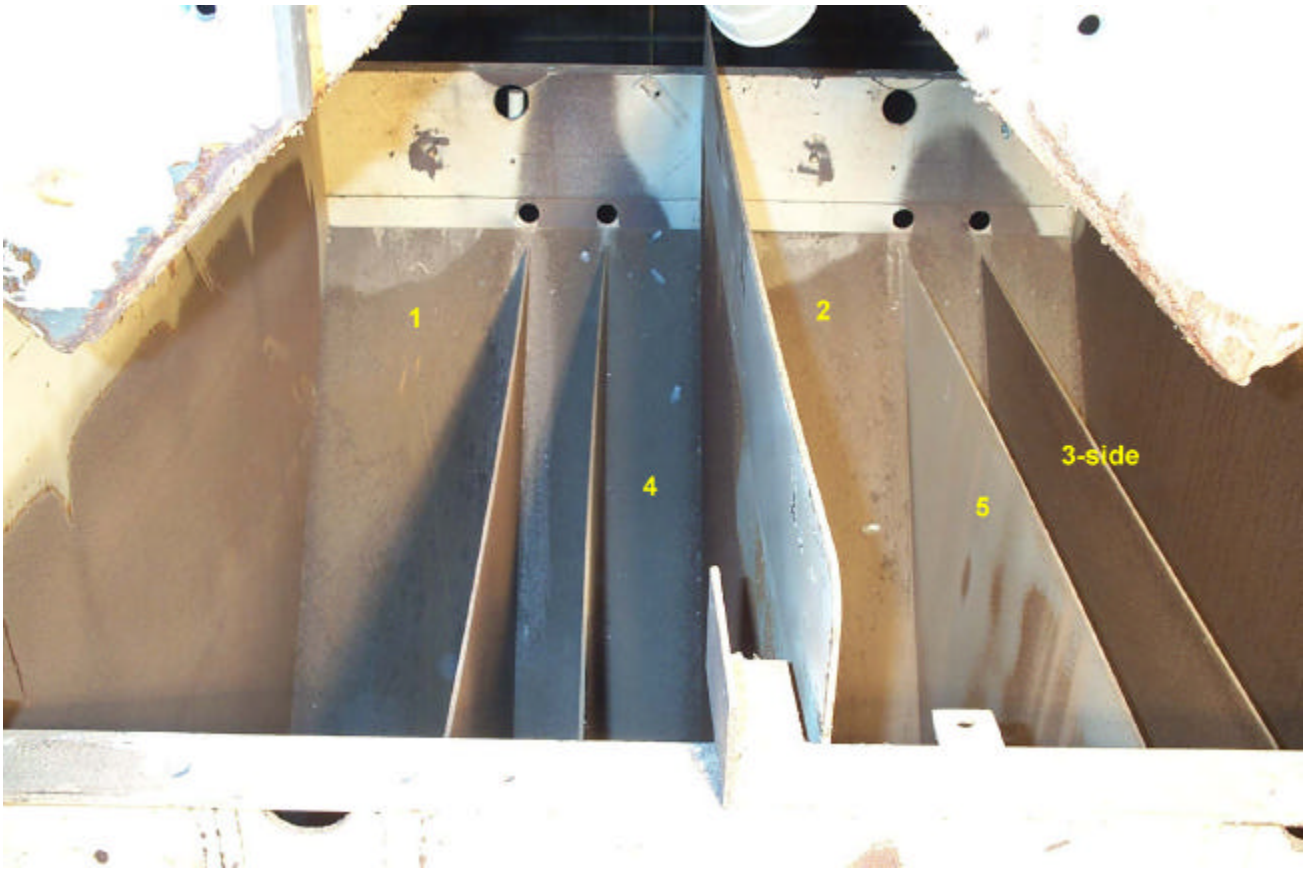
Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, inside left

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	15	< MDA	42	175
2	9	< MDA	62	275
3	8	< MDA	44	185
4	11	< MDA	60	265
5	10	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, front

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	11	< MDA	19	< MDA
7	7	< MDA	16	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, rear

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
8	11	< MDA	17	< MDA
9	14	< MDA	22	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

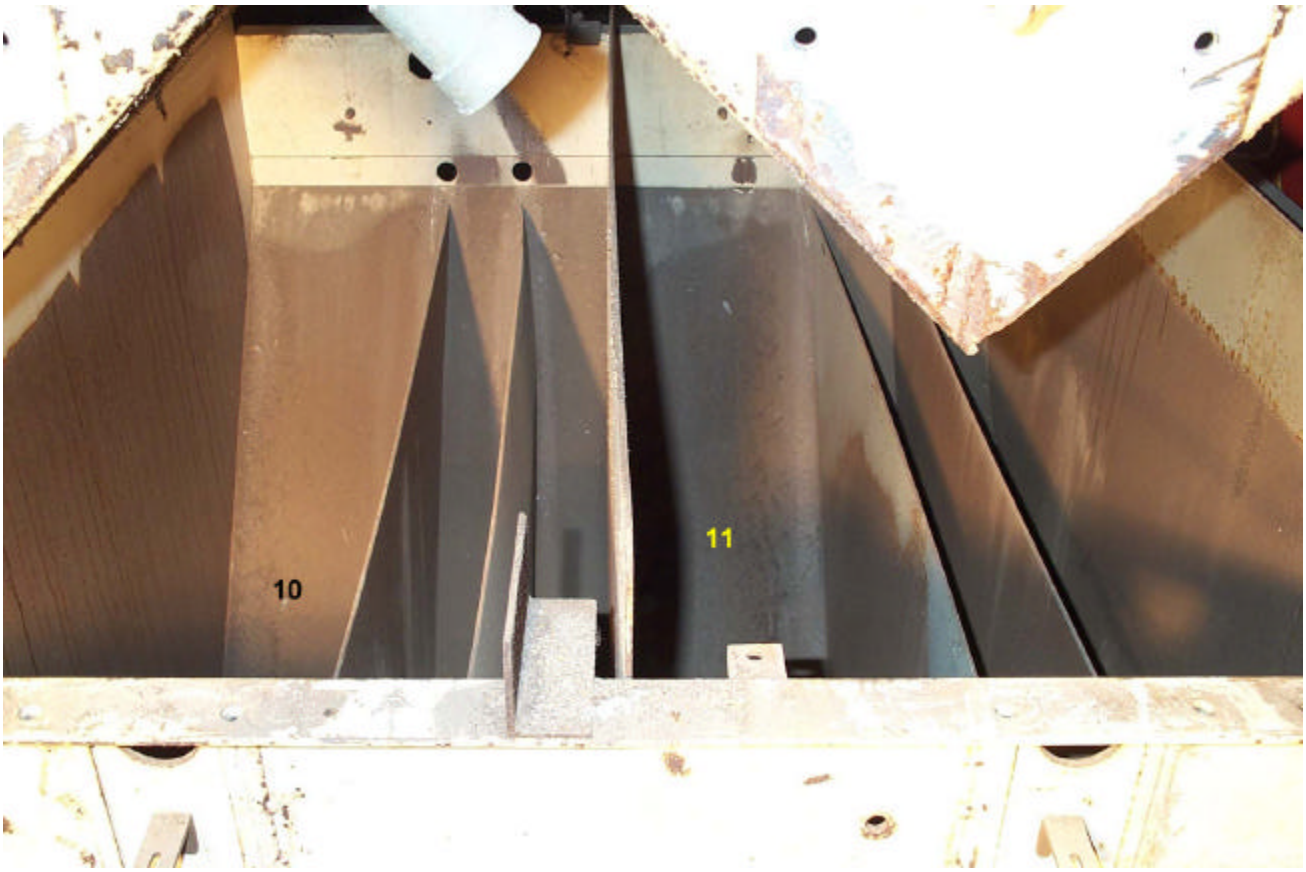
Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, inside right

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
10	10	< MDA	81	370
11	10	< MDA	66	295

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

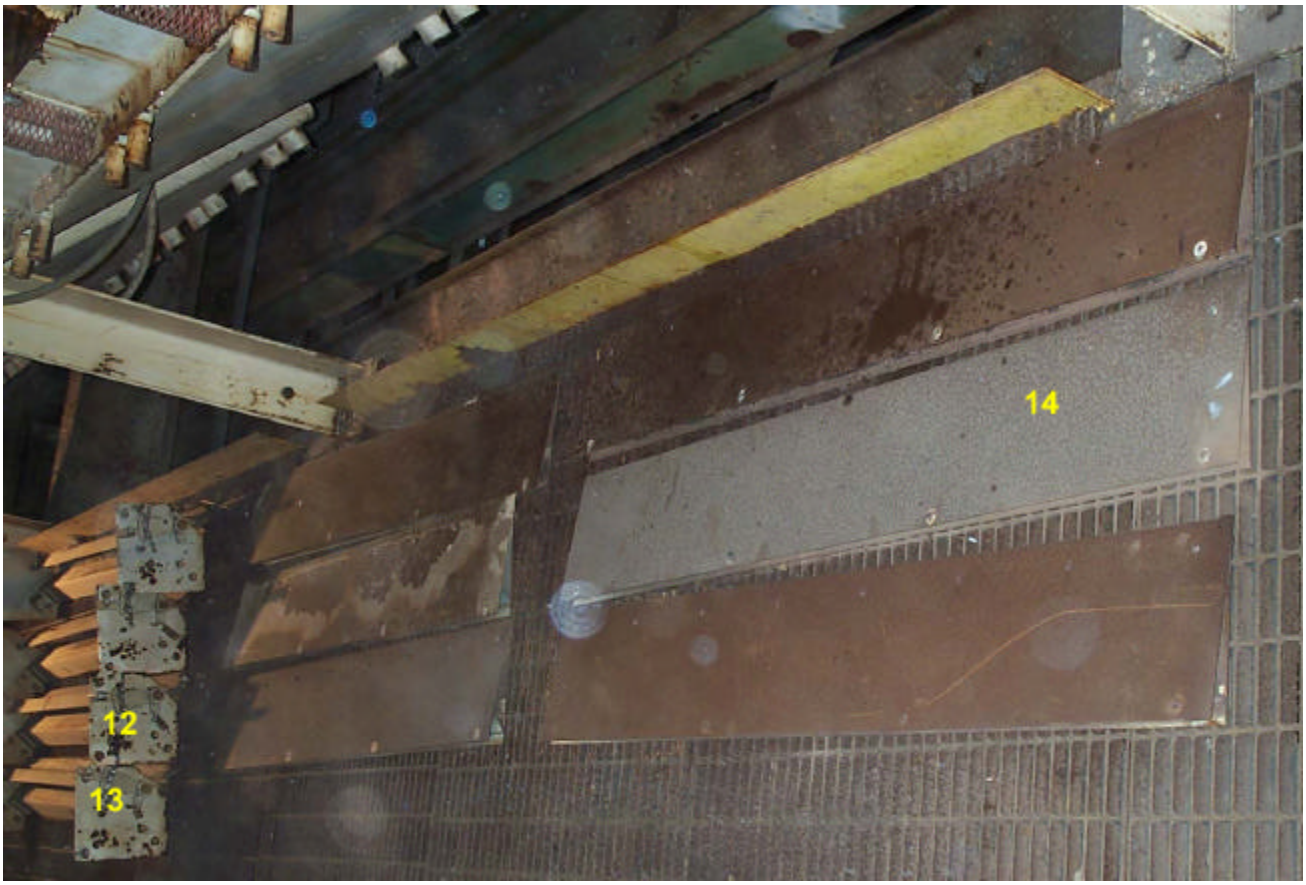
Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, removed fins

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	6	< MDA	14	< MDA
13	10	< MDA	18	< MDA
14	7	< MDA	15	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, miscellaneous parts

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	4	< MDA	16	< MDA
16	8	< MDA	35	140
17	9	< MDA	24	85
18	3	< MDA	6	< MDA
19	7	< MDA	26	95
20	8	< MDA	29	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

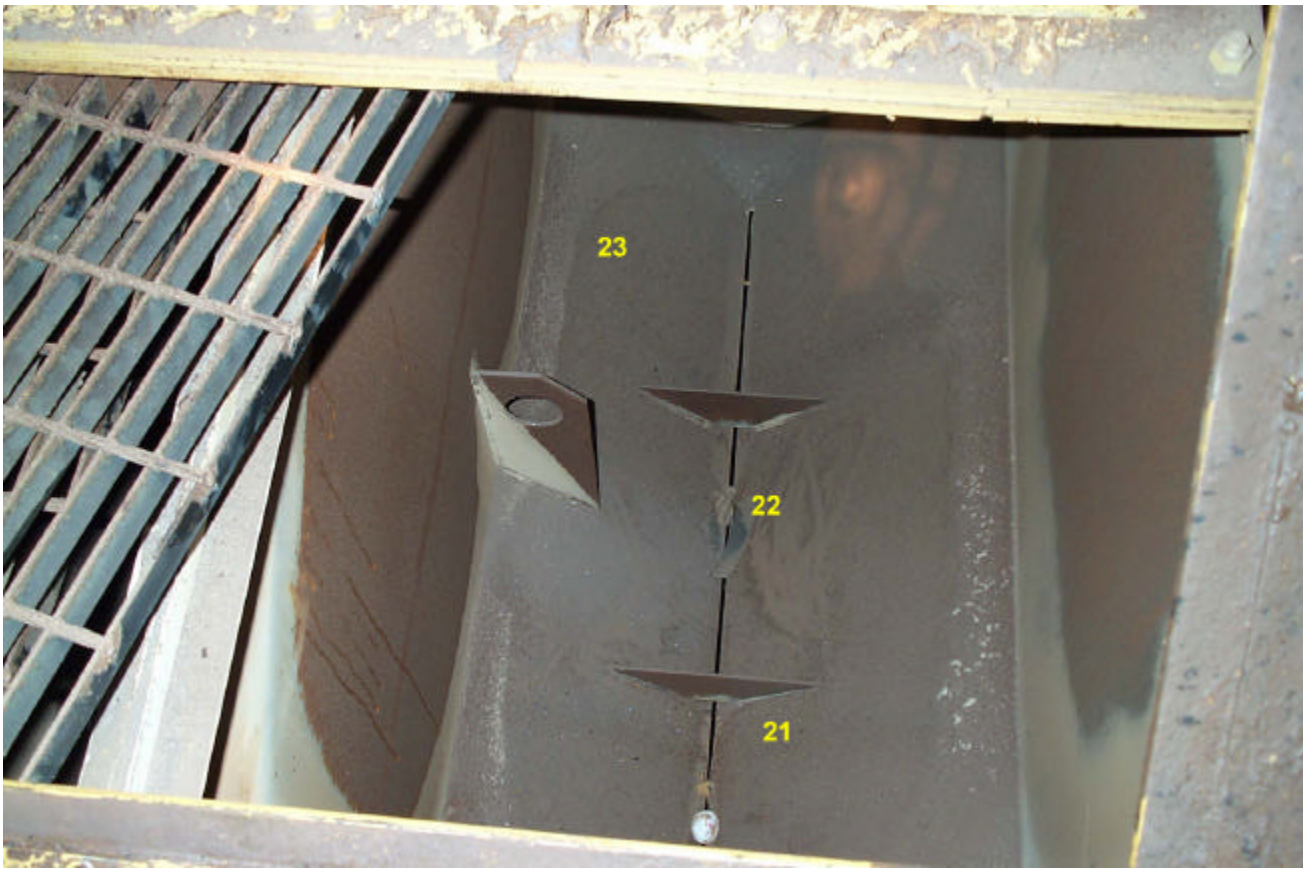
Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, inside hopper, right side

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	7	< MDA	73	330
22	12	< MDA	189	910
23	5	< MDA	69	310

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

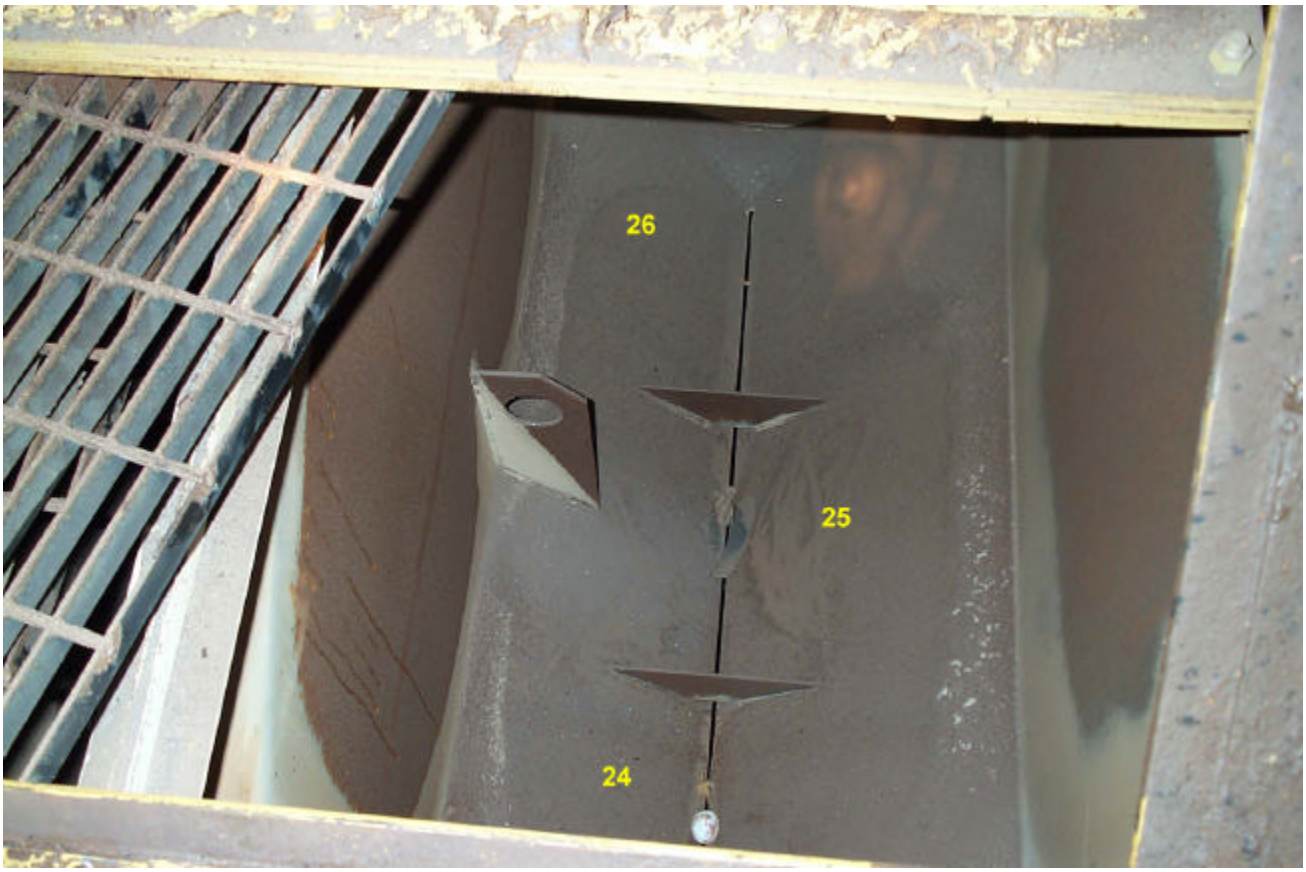
Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, inside hopper, left side

Notes: Originally unaffected, reclassified as affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
24	13	< MDA	90	415
25	8	< MDA	106	495
26	5	< MDA	58	255

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 9/13/01
MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 9/13/01
MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, inside circular opening

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
27	11	< MDA	31	120
28	7	< MDA	30	115

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, top

Notes: Originally unaffected, reclassified as affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
29	6	< MDA	44	185
30	7	< MDA	36	145

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 75 dpm/100 cm2

Survey Unit Number: 40 **Survey Unit:** Finisher High Tension Separators, elevator

Notes: Affected. #31 thru #35 taken on cups, every 10 cups; #36 is on the belt; #37 inside wall, lower level; #38 floor of elevator; #39 wall second level

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	13	55	9	< MDA
32	10	< MDA	12	50
33	9	< MDA	16	70
34	3	< MDA	19	85
35	11	< MDA	22	100
36	11	< MDA	21	95
37	8	< MDA	16	70
38	5	< MDA	27	125
39	6	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - rear of unit

Notes: Unaffected. Misleabeled as SU 40.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	25	115	26	120
2	11	< MDA	12	50
3	13	55	66	320
4	11	< MDA	39	185
5	12	50	10	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

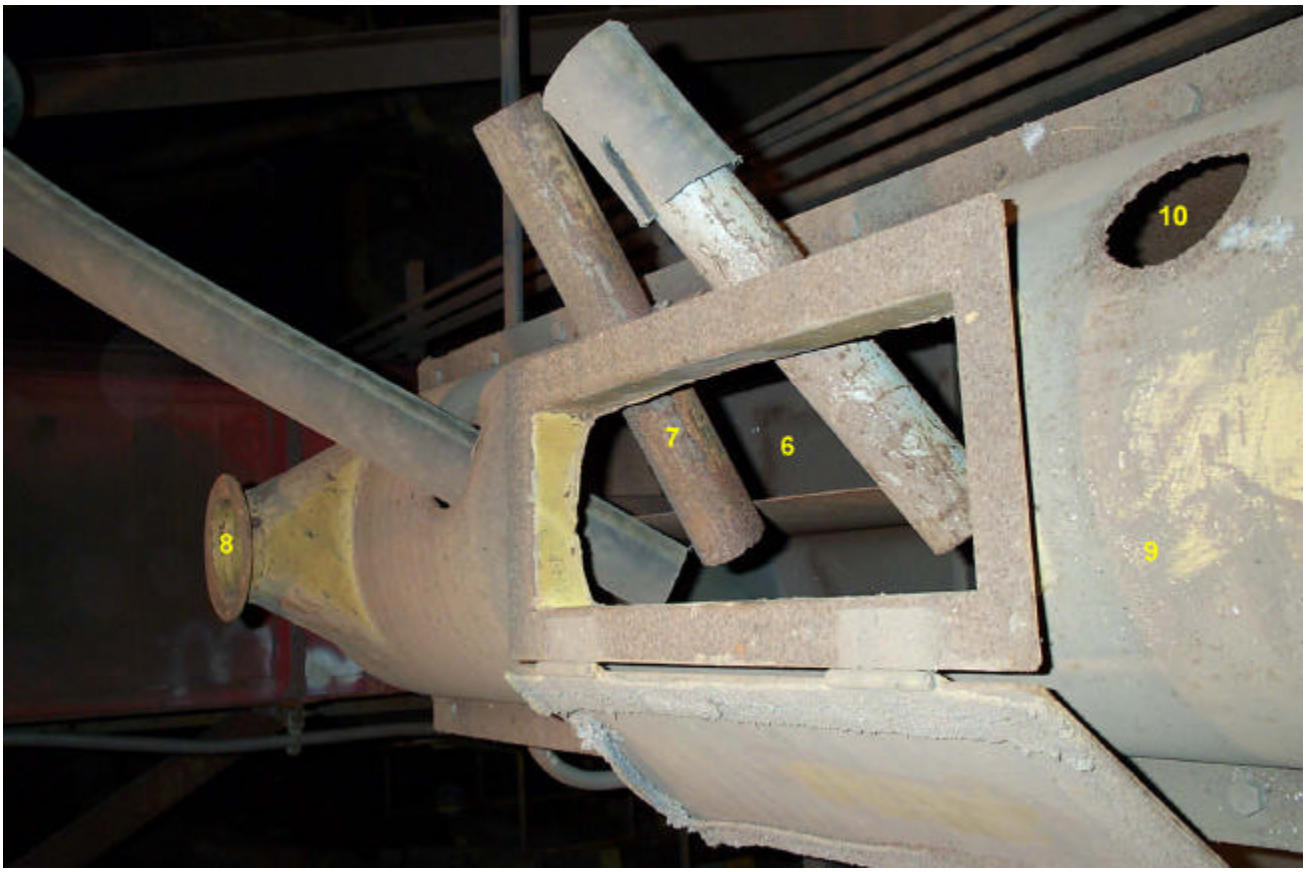
Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - hopper

Notes: Unaffected. Misleabeled as SU 40.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	15	65	28	130
7	4	< MDA	18	80
8	6	< MDA	35	165
9	10	< MDA	34	160
10	5	< MDA	18	80

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - front of unit, upper section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	23	105	17	75
12	22	100	82	400
13	14	60	63	305
14	31	145	67	325

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

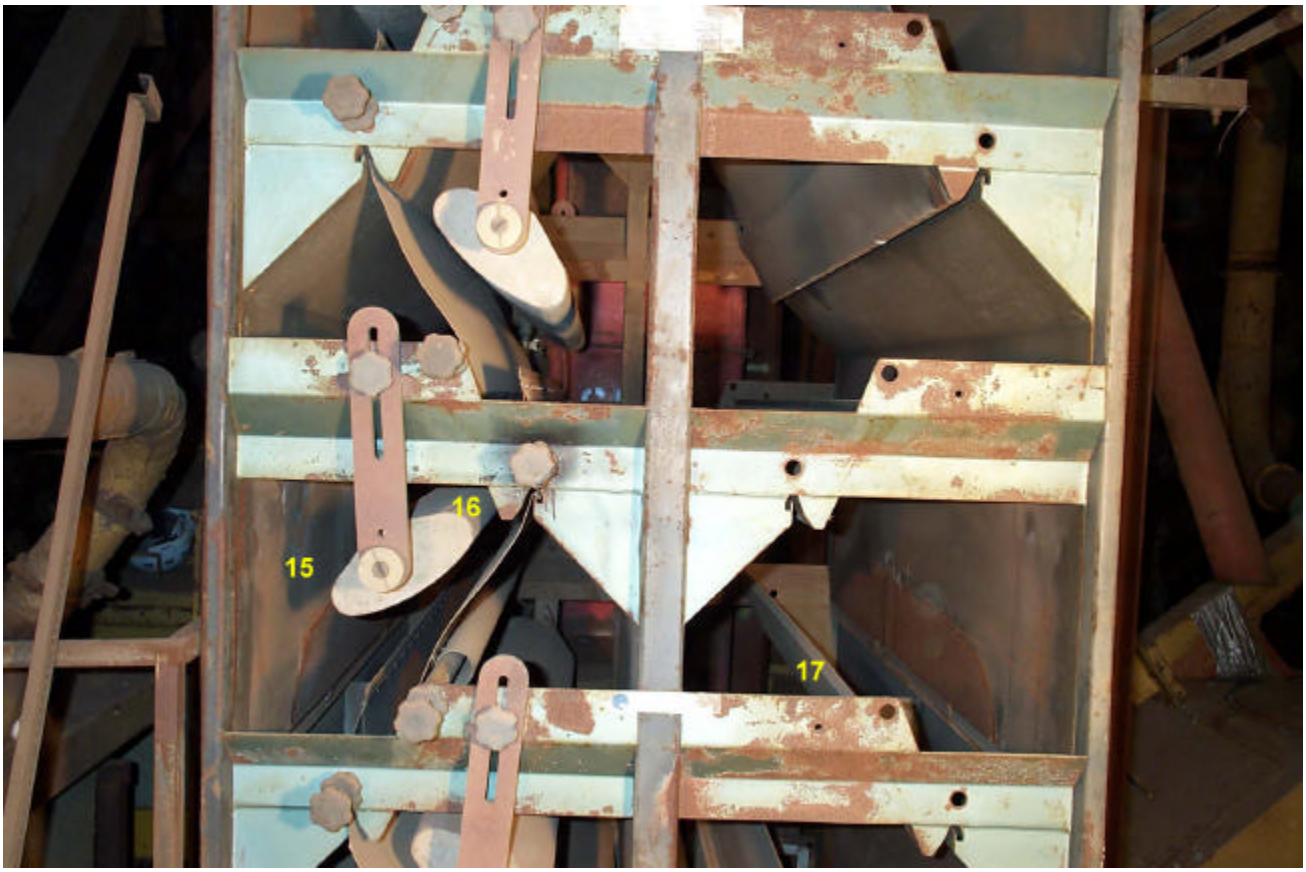
Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - front of unit, mid section

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
15	20	90	17	75
16	20	90	54	260
17	12	50	32	150

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - front of unit, lower section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	23	105	71	345
19	9	< MDA	16	70
20	5	< MDA	12	50

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 41 **Survey Unit:** Rutile Plate Separator - elevator

Notes: Unaffected. #21 thru #25 taken on cups, every 10 cups; #26 is on the belt; #27 inside wall, lower level; #28 floor of elevator; #29 wall second level.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	13	55	19	85
22	15	65	34	160
23	14	60	19	85
24	20	90	25	115
25	20	90	15	65
26	12	50	15	65
27	13	55	5	< MDA
28	9	< MDA	28	130
29	11	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

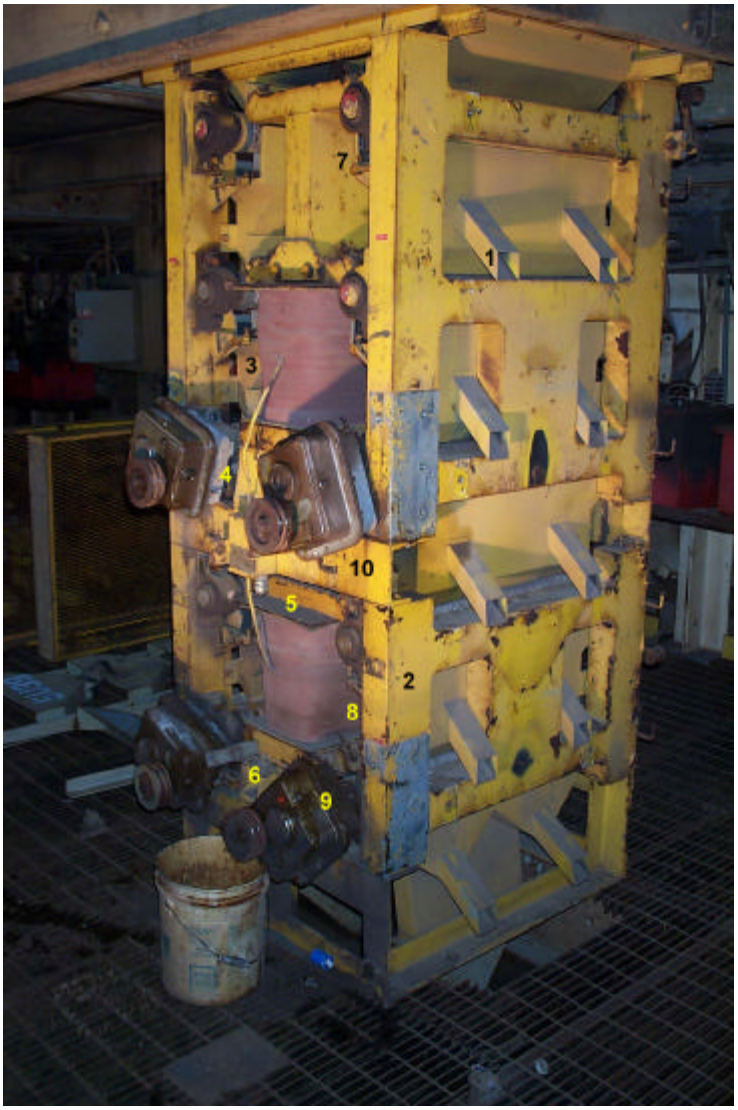
Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - stripped view

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	7	< MDA	138	675
2	29	130	260	1285
3	8	< MDA	57	270
4	8	< MDA	64	305
5	13	< MDA	45	210
6	15	60	142	695
7	13	< MDA	146	715
8	10	< MDA	36	165
9	6	< MDA	93	450
10	8	< MDA	93	450

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - side stripped view

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	4	< MDA	155	760
12	5	< MDA	47	220
13	7	< MDA	85	410
14	3	< MDA	38	175
15	9	< MDA	92	445
16	6	< MDA	45	210

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - side panels

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
17	12	< MDA	7	< MDA
18	1	< MDA	2	< MDA
19	13	< MDA	15	60
20	2	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

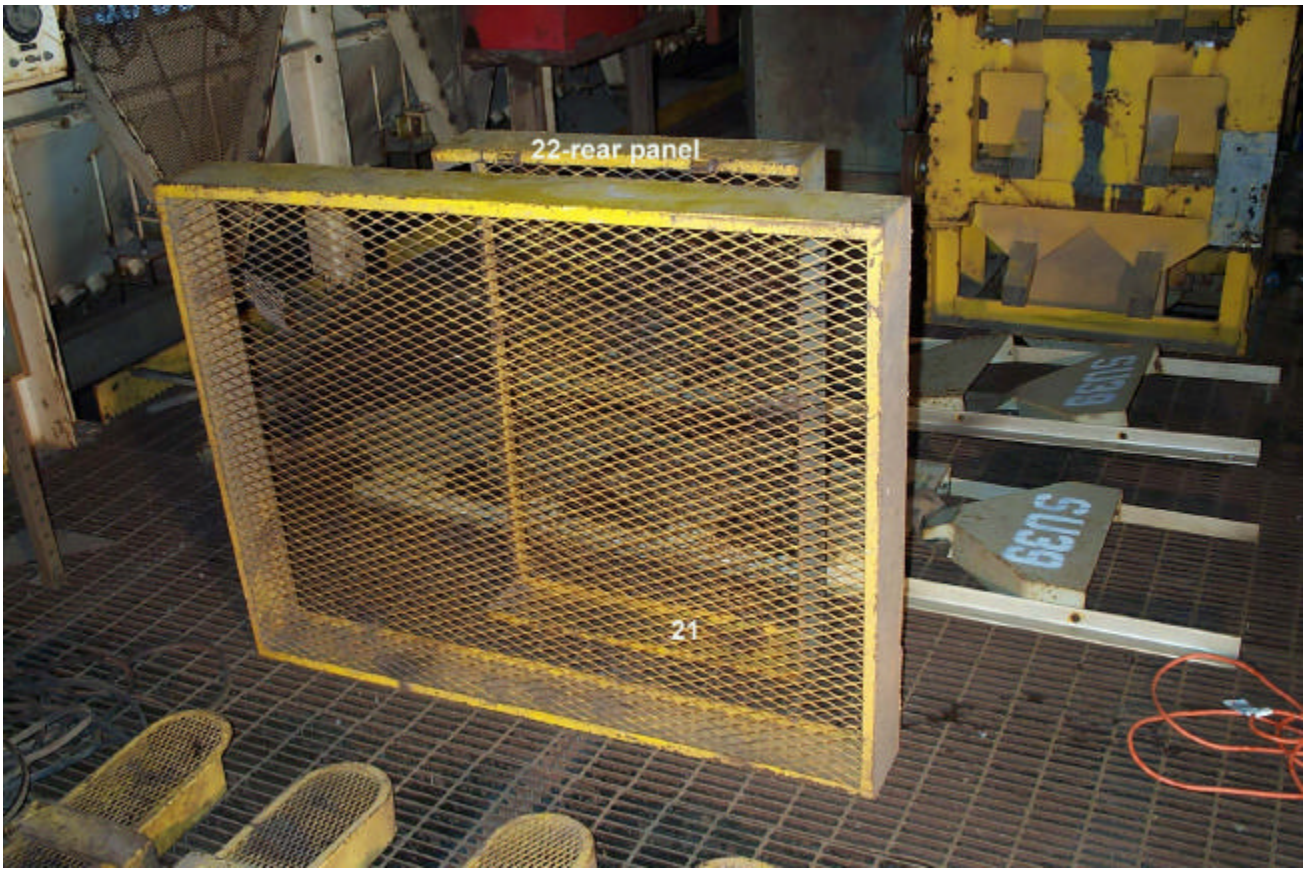
Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - rear panels

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	2	< MDA	112	545
22	5	< MDA	41	190

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

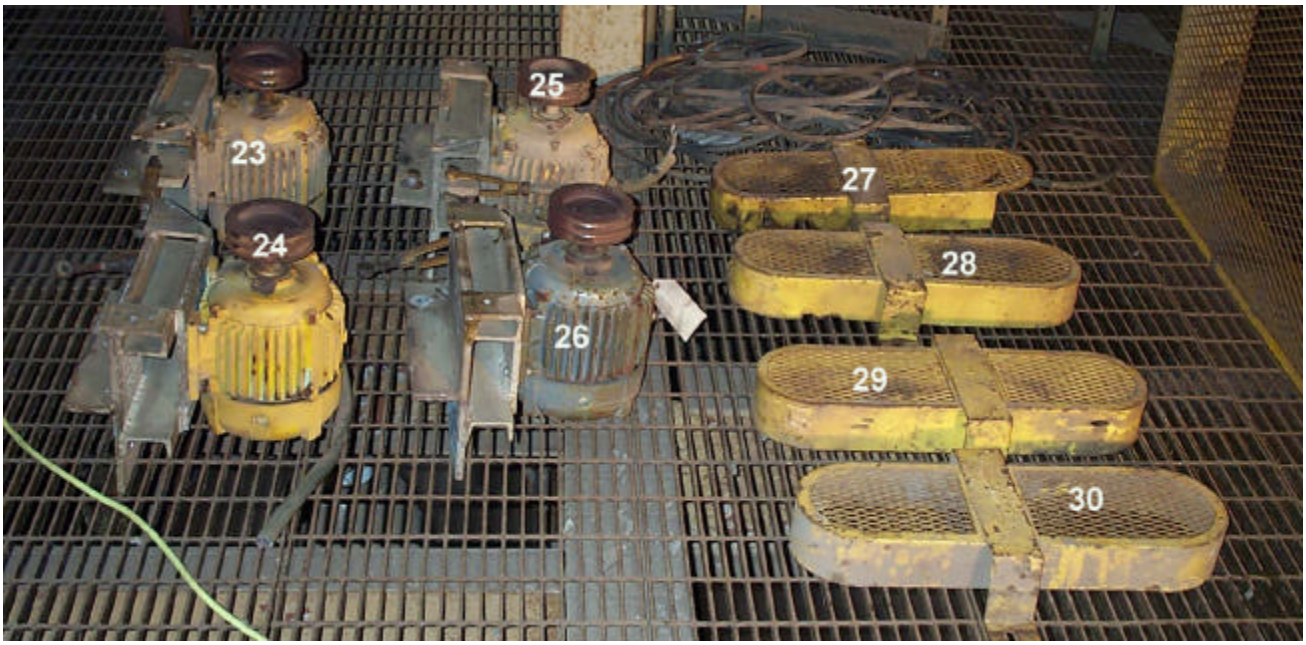
Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - Magnetic drives and covers

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
23	5	< MDA	27	120
24	7	< MDA	73	350
25	11	< MDA	72	345
26	2	< MDA	78	375
27	11	< MDA	82	395
28	5	< MDA	14	55
29	9	< MDA	14	55
30	8	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - hopper

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	15	60	59	280
32	7	< MDA	54	255
33	3	< MDA	31	140

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 8/22/01
MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 8/22/01
MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separator - hopper

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
34	12	< MDA	11	< MDA
35	10	< MDA	10	< MDA
36	10	< MDA	20	85

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/22/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 42 **Survey Unit:** Zircon Magnetic Separators, elevator

Notes: Affected. #31 thru #35 taken on cups, every 10 cups; #36 is on the belt; #37 inside wall, lower level; #38 floor of elevator; #39 wall second level.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	25	115	73	355
32	27	125	57	275
33	26	120	127	625
34	13	55	134	660
35	22	100	161	795
36	16	70	44	210
37	14	60	21	95
38	9	< MDA	30	140
39	8	< MDA	11	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

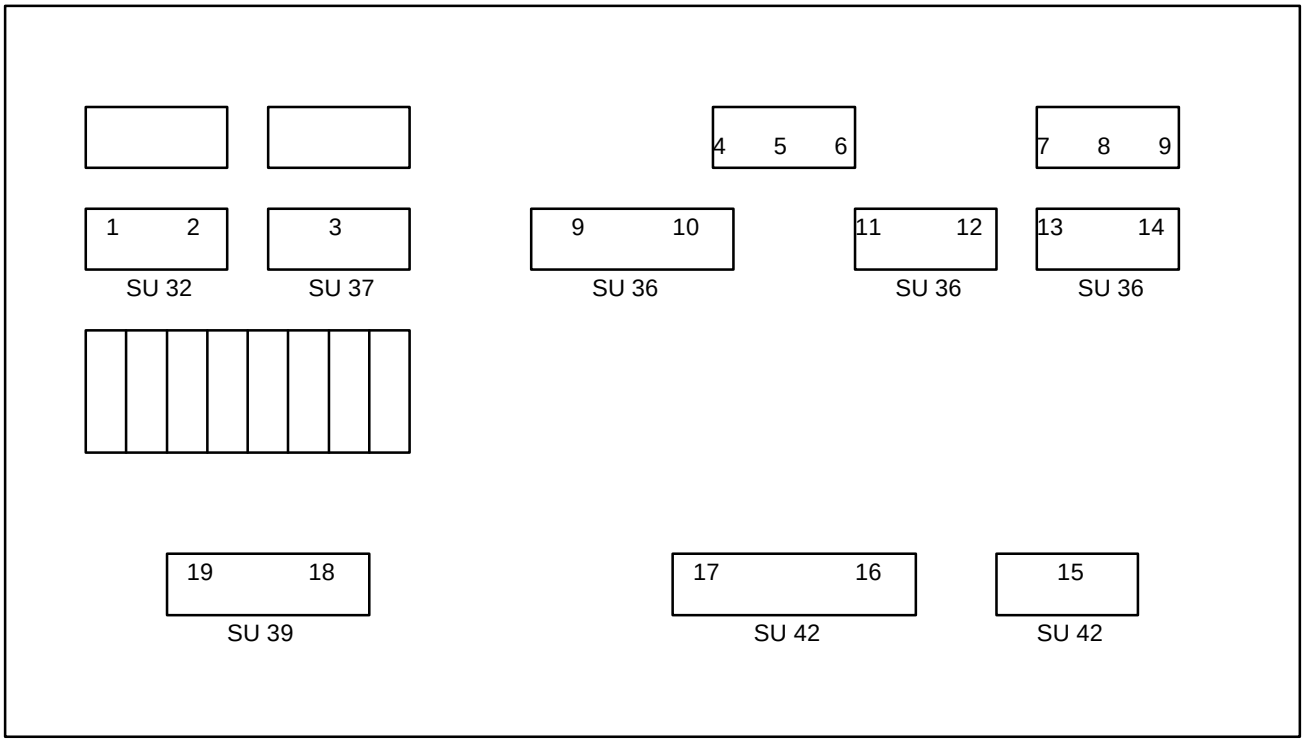
Serial Number: 134488

Survey date: 9/4/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 42 + **Survey Unit:** Dry Mill Conveyor - Upper level

Notes: Mostly affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	7	< MDA	22	100
2	2	< MDA	39	185
3	6	< MDA	44	210
4	3	< MDA	19	85
5	5	< MDA	17	75
6	3	< MDA	23	105
7	1	< MDA	24	110
8	4	< MDA	15	65
9	2	< MDA	23	105
10	6	< MDA	42	200

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

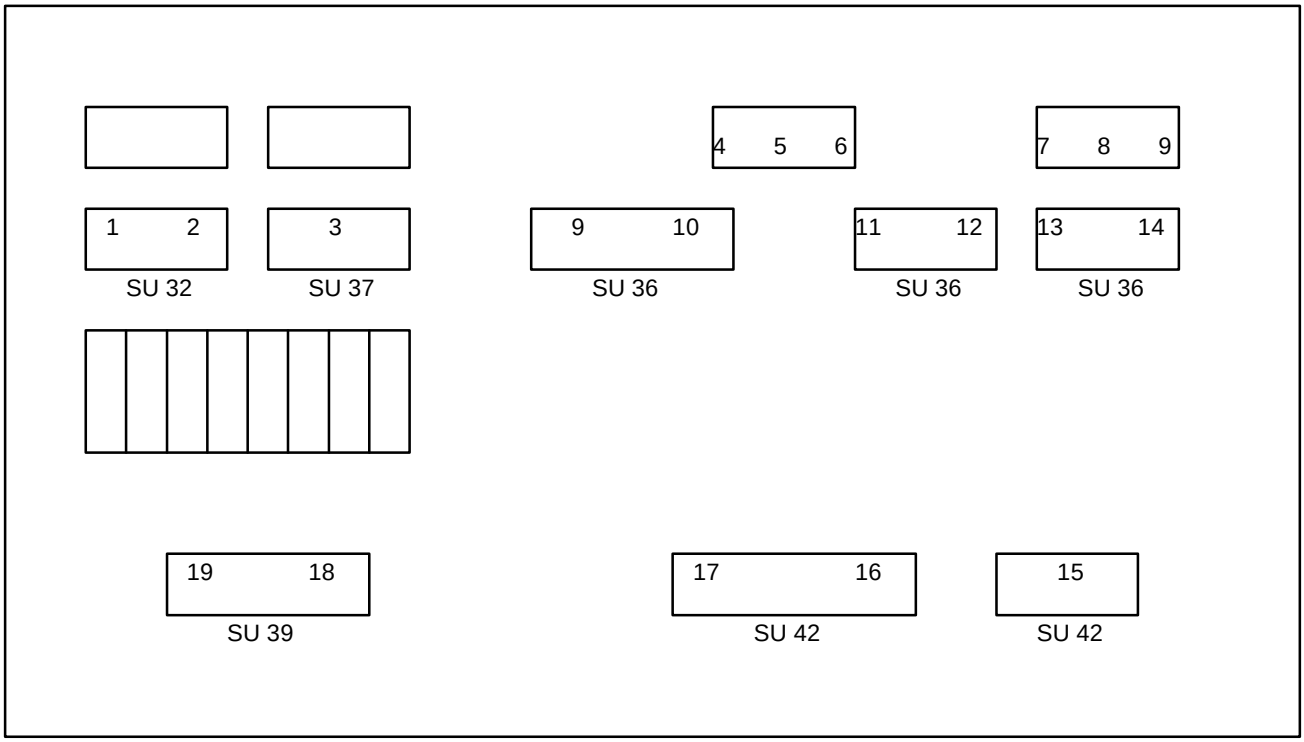
Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 42 + **Survey Unit:** Dry Mill Conveyor - Upper level

Notes: Mostly affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	3	< MDA	24	110
12	4	< MDA	39	185
13	3	< MDA	30	140
14	6	< MDA	42	200
15	3	< MDA	17	75
16	5	< MDA	41	195
17	4	< MDA	17	75
18	8	< MDA	30	140
19	2	< MDA	20	90

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

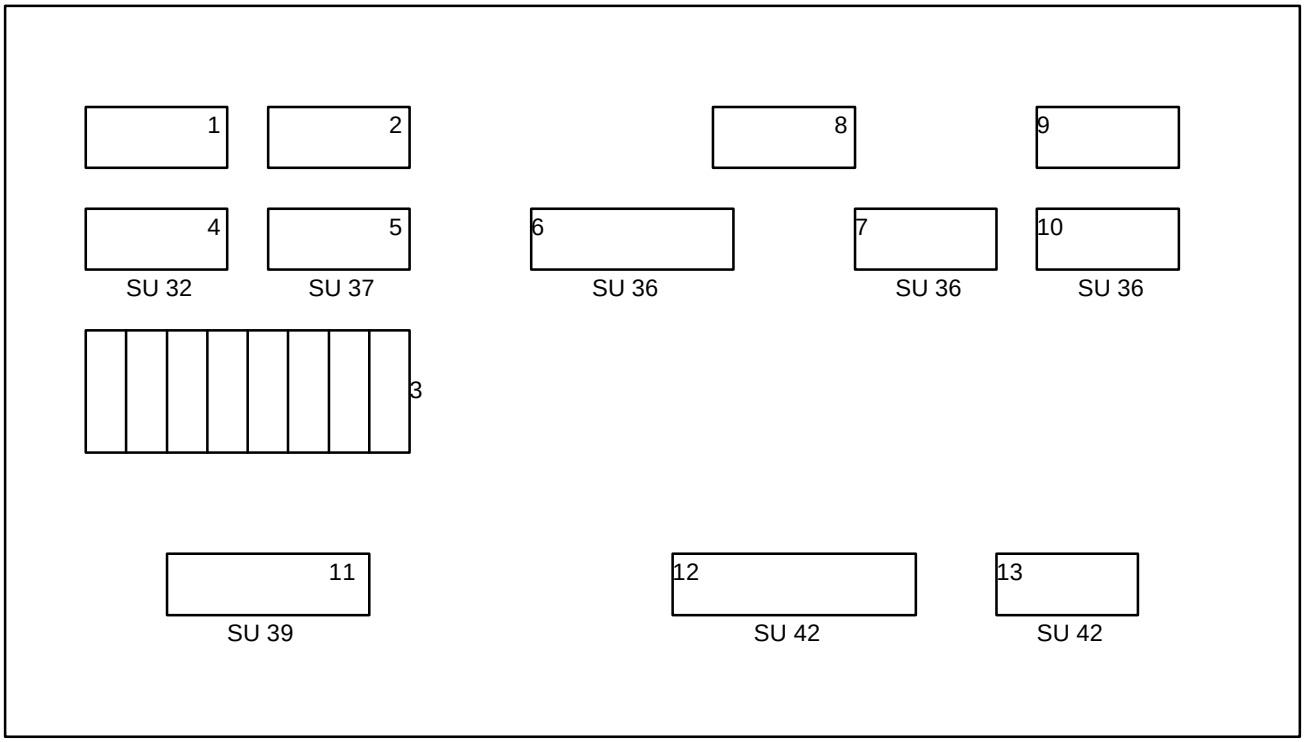
Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 42 + **Survey Unit:** Dry Mill Conveyor Mechanics - Upper level

Notes: Mostly affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	7	< MDA	22	100
2	2	< MDA	39	185
3	6	< MDA	44	210
4	3	< MDA	19	85
5	5	< MDA	17	75
6	3	< MDA	23	105
7	1	< MDA	24	110
8	4	< MDA	15	65
9	2	< MDA	23	105
10	6	< MDA	42	200

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

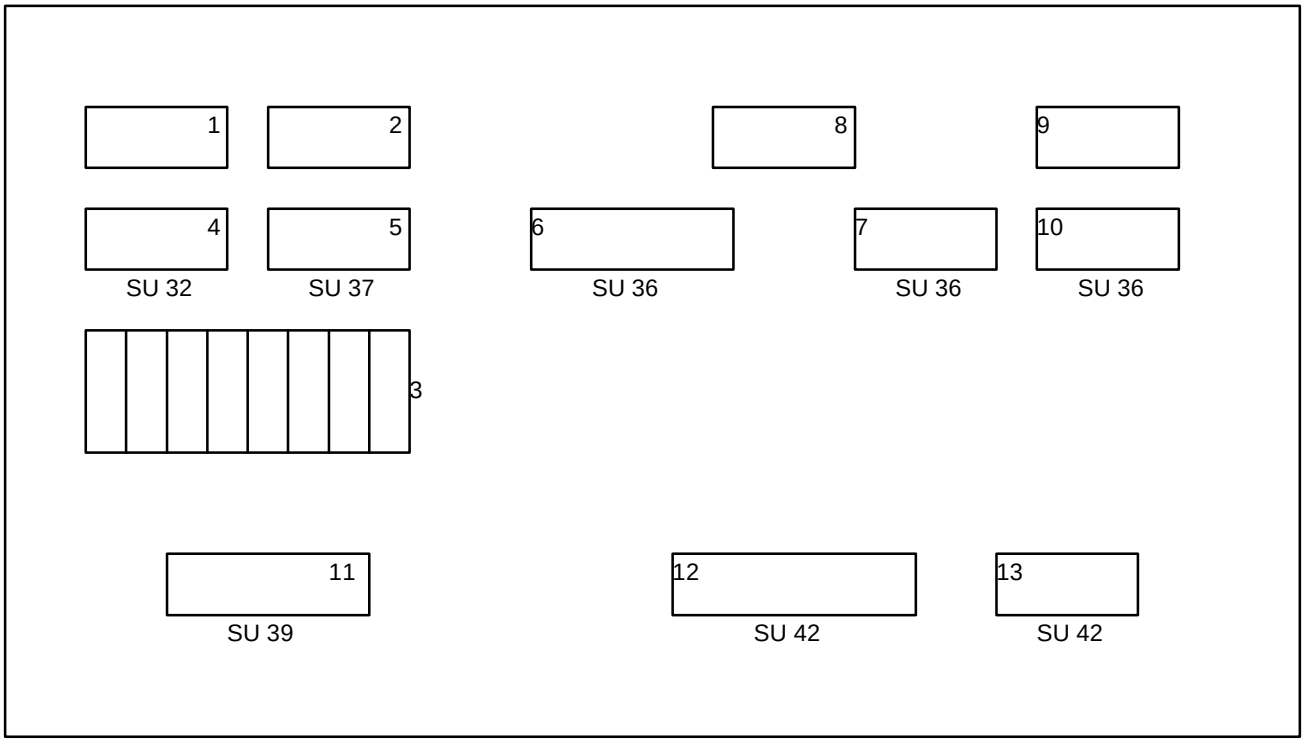
Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 42 + **Survey Unit:** Dry Mill Conveyor Mechanics - Upper level

Notes: Mostly affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	7	< MDA	22	100
12	2	< MDA	39	185
13	6	< MDA	44	210

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/26/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 43 **Survey Unit:** Monazite Transfer Sump.

Notes: Affected. Unit was detached from piping and launders.
Locations 1 thru 17 are on the inside of the sump.
All other data taken on the exterior of the sump.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	23	85
2	4	< MDA	27	105
3	3	< MDA	15	< MDA
4	5	< MDA	10	< MDA
5	4	< MDA	27	105
6	8	< MDA	20	< MDA
7	6	< MDA	25	95
8	1	< MDA	7	< MDA
9	5	< MDA	8	< MDA
10	1	< MDA	7	< MDA

Smear Info

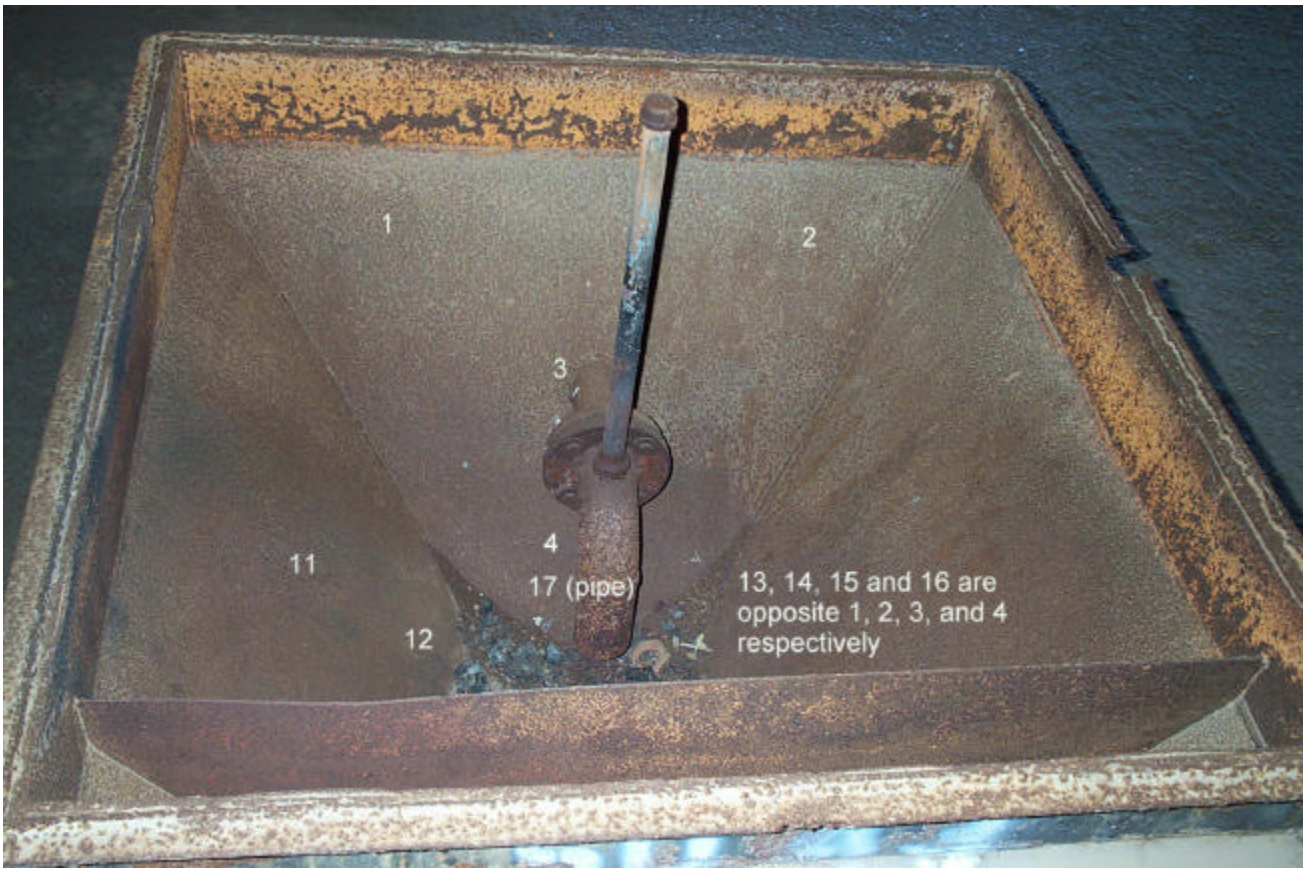
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 43 **Survey Unit:** Monazite Transfer Sump.

Notes: Affected. Unit was detached from piping and launders.
Locations 1 thru 17 are on the inside of the sump.
All other data taken on the exterior of the sump.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	6	< MDA	14	< MDA
12	3	< MDA	12	< MDA
13	5	< MDA	6	< MDA
14	5	< MDA	10	< MDA
15	5	< MDA	10	< MDA
16	4	< MDA	16	< MDA
17	5	< MDA	10	< MDA

Smear Info

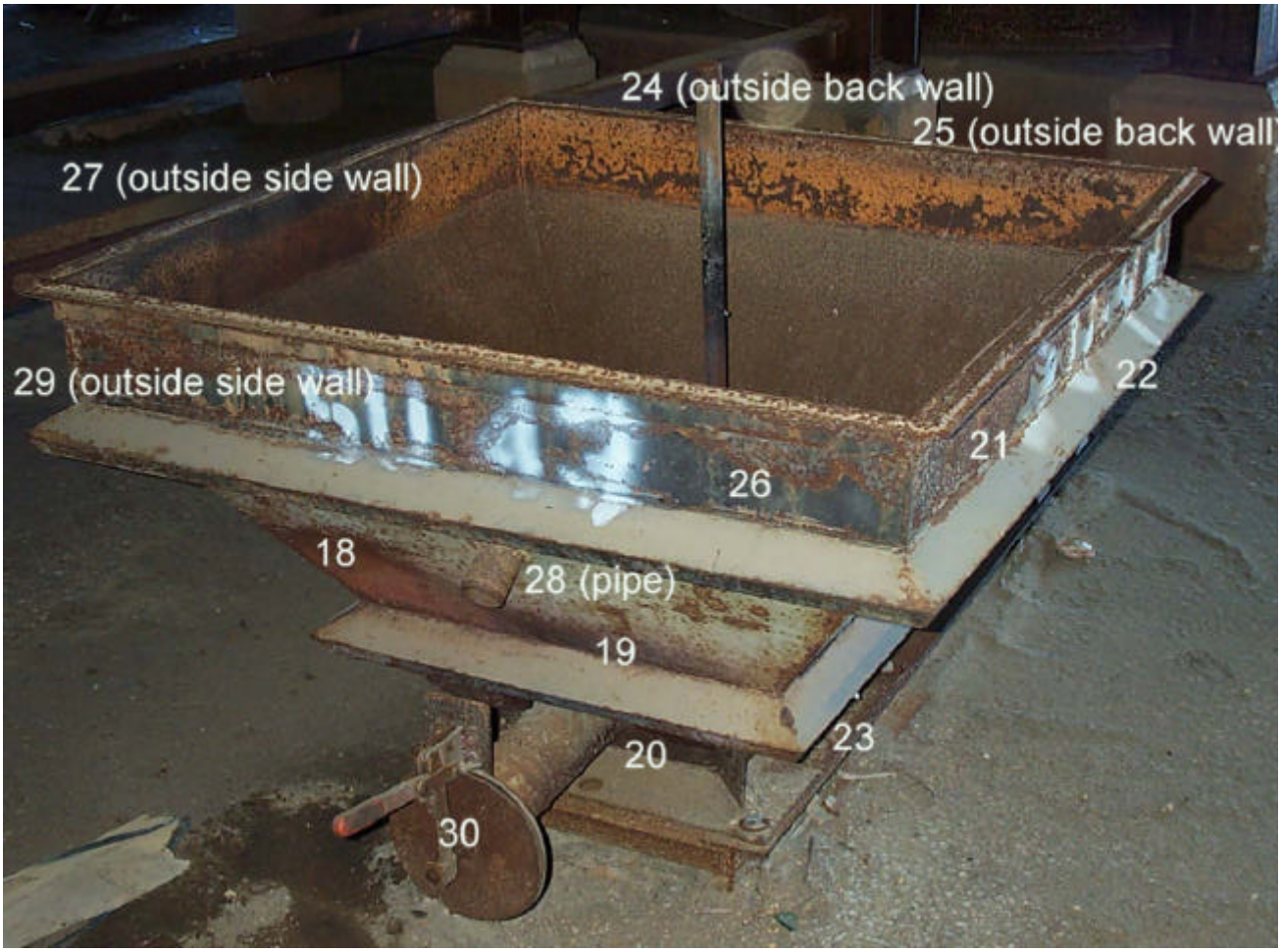
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 43 **Survey Unit:** Monazite Transfer Sump.

Notes: Affected. Unit was detached from piping and launders.
Locations 1 thru 17 are on the inside of the sump.
All other data taken on the exterior of the sump.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	6	< MDA	34	140
19	3	< MDA	7	< MDA
20	5	< MDA	6	< MDA
21	5	< MDA	7	< MDA
22	5	< MDA	4	< MDA
23	4	< MDA	13	< MDA
24	5	< MDA	14	< MDA

Smear Info

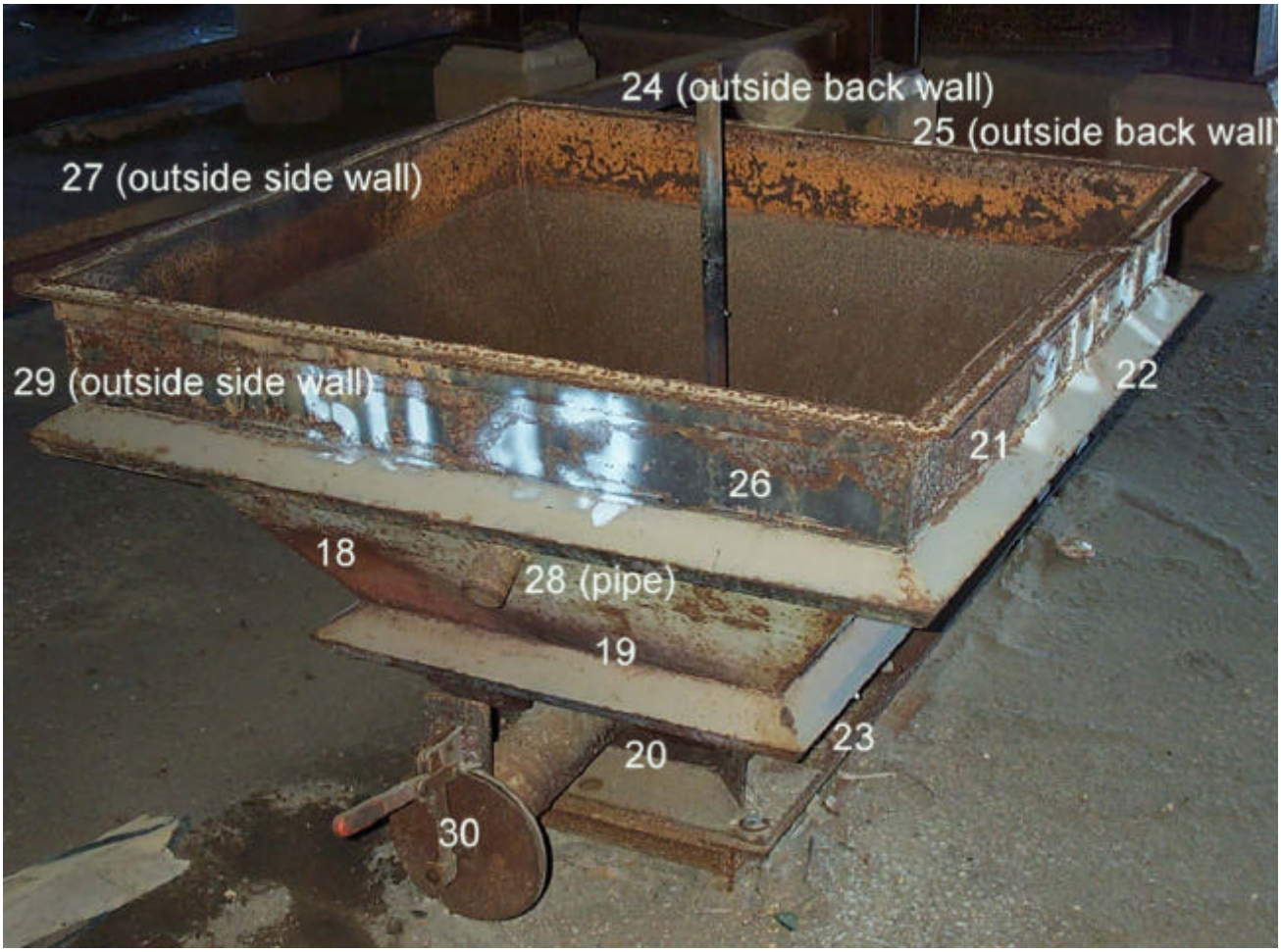
Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 43 **Survey Unit:** Monazite Transfer Sump.

Notes: Affected. Unit was detached from piping and launders.
Locations 1 thru 17 are on the inside of the sump.
All other data taken on the exterior of the sump.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
25	6	< MDA	16	< MDA
26	3	< MDA	5	< MDA
27	5	< MDA	10	< MDA
28	5	< MDA	14	< MDA
29	5	< MDA	7	< MDA
30	4	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/11/01
MDA = 79 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe
Serial Number: 161133
Survey date: 7/10/01
MDA = 71 dpm/100 cm2

Survey Unit Number: 44 **Survey Unit:** Dry Mill Floor

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	40	190
2	6	< MDA	9	< MDA
3	5	< MDA	21	95
4	6	< MDA	34	160
5	4	< MDA	18	80
6	2	< MDA	8	< MDA
7	7	< MDA	11	< MDA
8	4	< MDA	47	225
9	4	< MDA	11	< MDA
10	0	< MDA	23	105

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

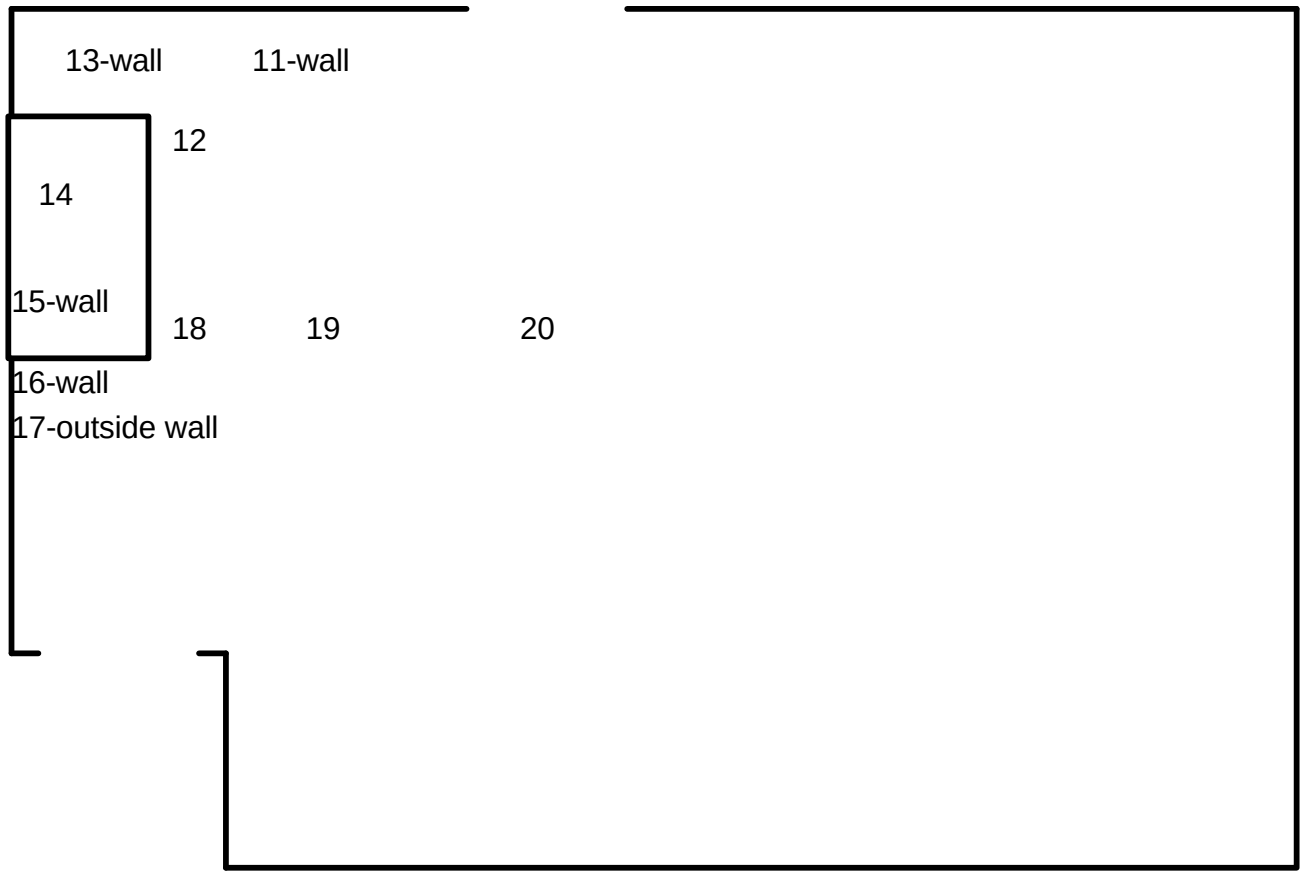
Serial Number: 134488

Survey date: 10/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 44 **Survey Unit:** Dry Mill Floor

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	2	< MDA	7	< MDA
12	0	< MDA	25	115
13	9	< MDA	28	130
14	1	< MDA	20	90
15	3	< MDA	32	150
16	1	< MDA	11	< MDA
17	4	< MDA	11	< MDA
18	3	< MDA	42	200
19	2	< MDA	26	120
20	1	< MDA	23	105

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 44 **Survey Unit:** Dry Mill Floor

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	3	< MDA	30	140
22	2	< MDA	50	240
23	4	< MDA	66	320
24	1	< MDA	13	55
25	5	< MDA	13	55
26	3	< MDA	60	290
27	4	< MDA	31	145
28	5	< MDA	29	135
29	3	< MDA	46	220
30	4	< MDA	29	135

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

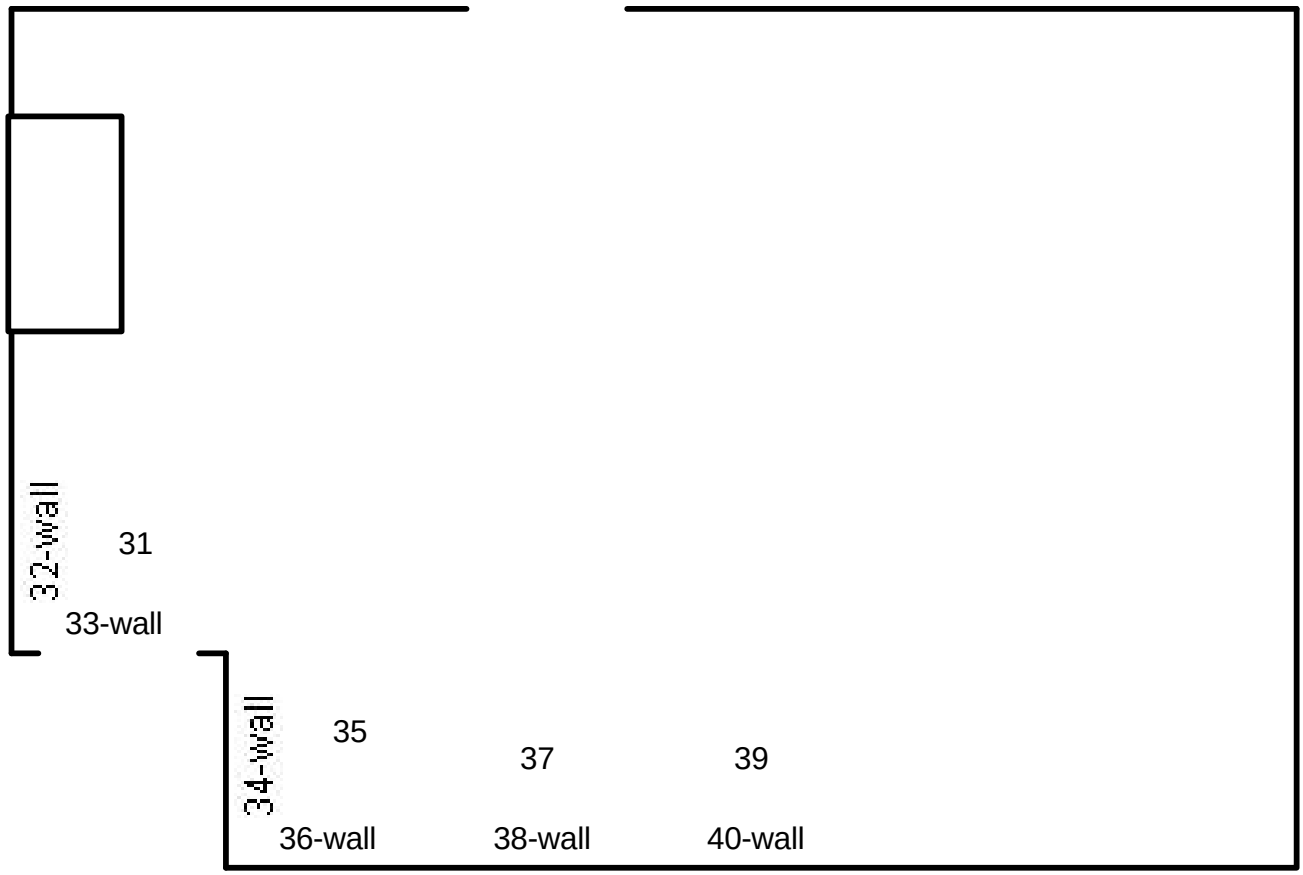
Serial Number: 134488

Survey date: 10/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 44 **Survey Unit:** Dry Mill Floor

Notes: Affected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	6	< MDA	19	85
32	3	< MDA	31	145
33	5	< MDA	10	< MDA
34	5	< MDA	14	60
35	5	< MDA	118	580
36	1	< MDA	15	65
37	2	< MDA	61	295
38	3	< MDA	6	< MDA
39	3	< MDA	68	330
40	6	< MDA	55	265

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 44 **Survey Unit:** Dry Mill Floor

Notes: Affected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
41	6	< MDA	48	230
42	4	< MDA	71	345
43	10	< MDA	81	395
44	7	< MDA	37	175
45	10	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

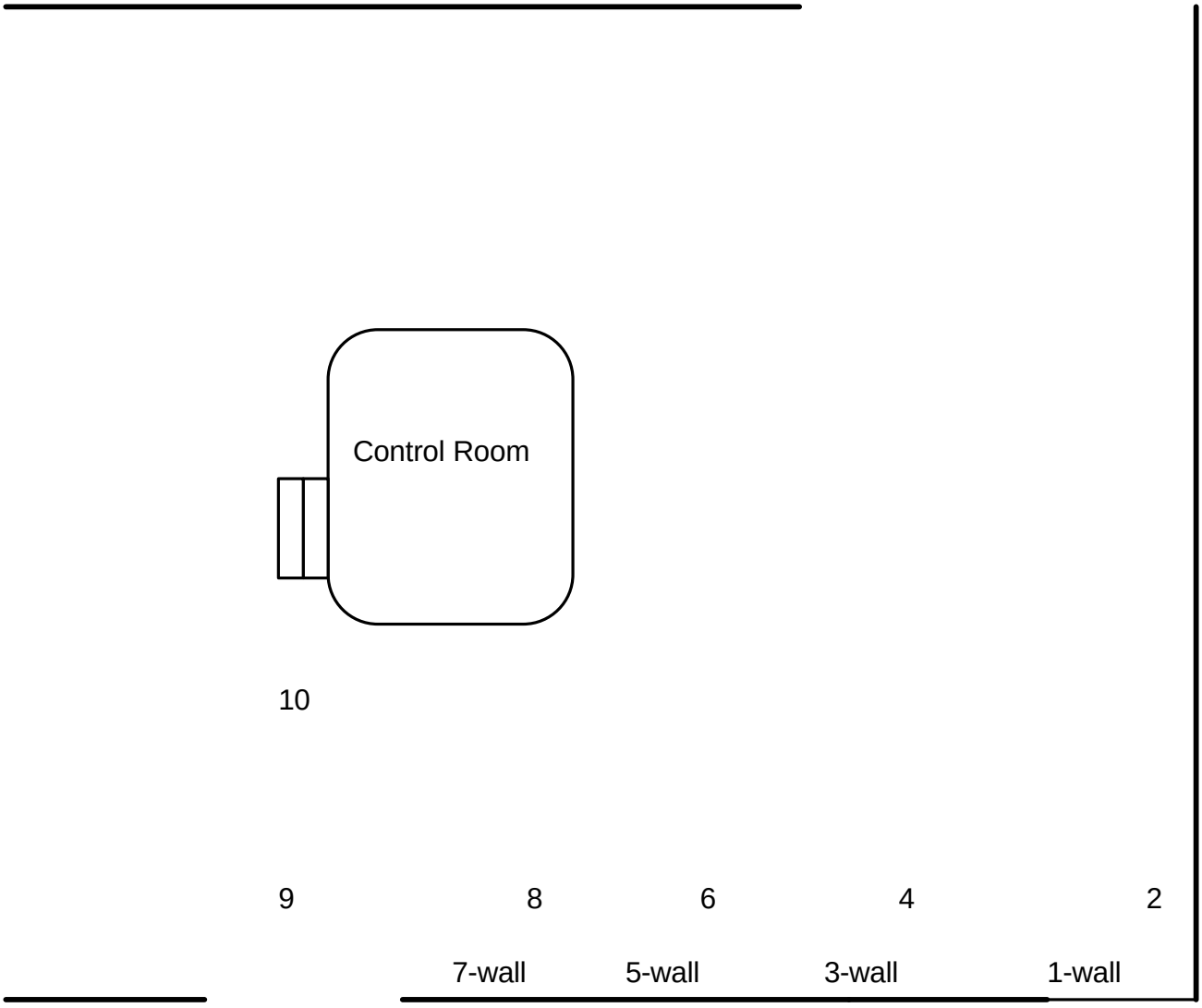
Serial Number: 134488

Survey date: 10/2/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 45 **Survey Unit:** Wet Mill Floor

Notes: Unaffected. Dark line represent area where the wall remains intact.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	11	< MDA
2	3	< MDA	16	70
3	3	< MDA	14	60
4	8	< MDA	21	95
5	9	< MDA	17	75
6	1	< MDA	30	140
7	6	< MDA	18	80
8	4	< MDA	27	125
9	6	< MDA	30	140
10	5	< MDA	34	160

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

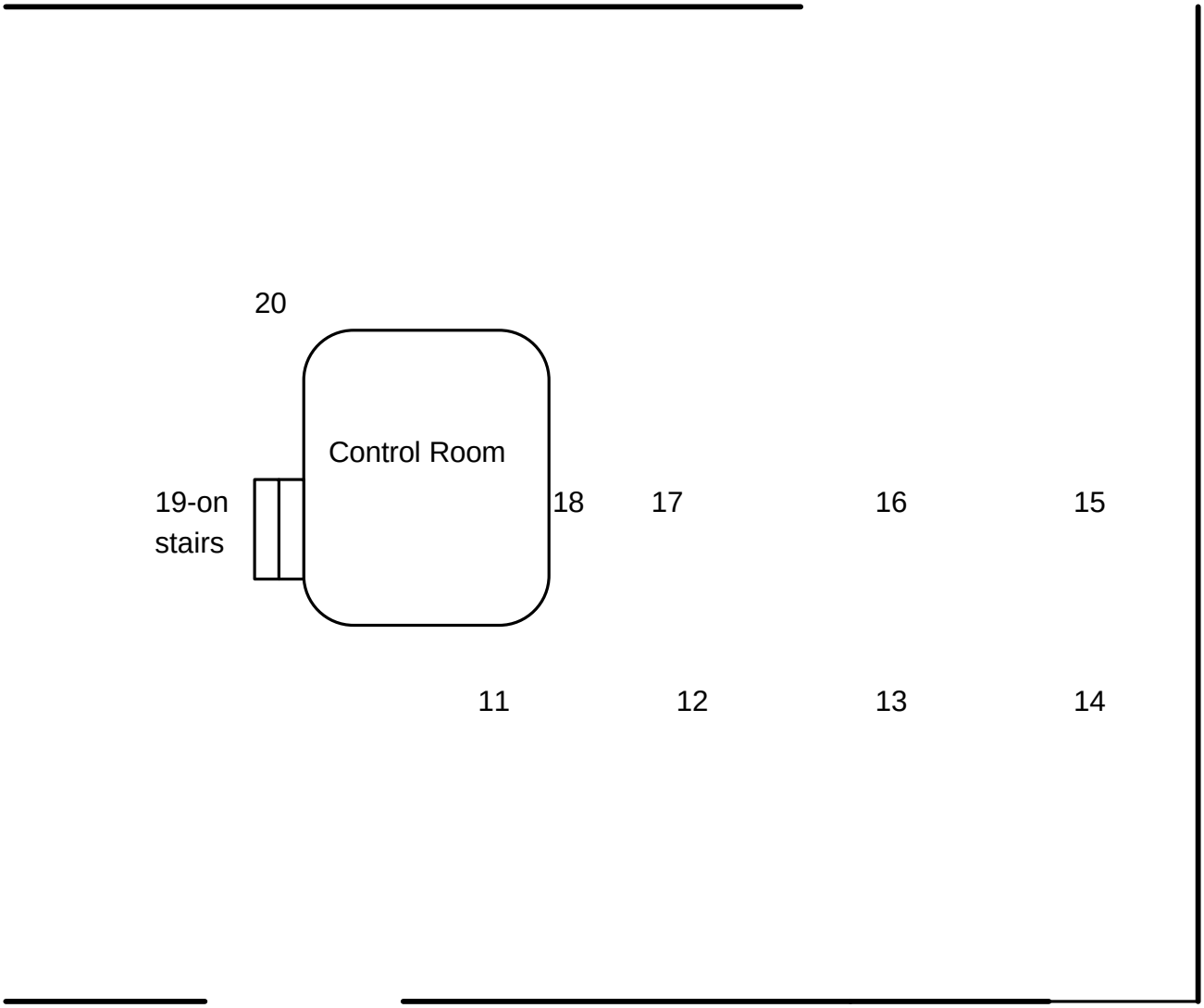
Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 45 **Survey Unit:** Wet Mill Floor

RSI

Notes: Unaffected. Dark line represent area where the wall remains intact.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
11	8	< MDA	26	120
12	2	< MDA	27	125
13	1	< MDA	17	75
14	8	< MDA	31	145
15	2	< MDA	42	200
16	4	< MDA	28	130
17	5	< MDA	23	105
18	8	< MDA	25	115
19	3	< MDA	27	125
20	3	< MDA	45	215

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

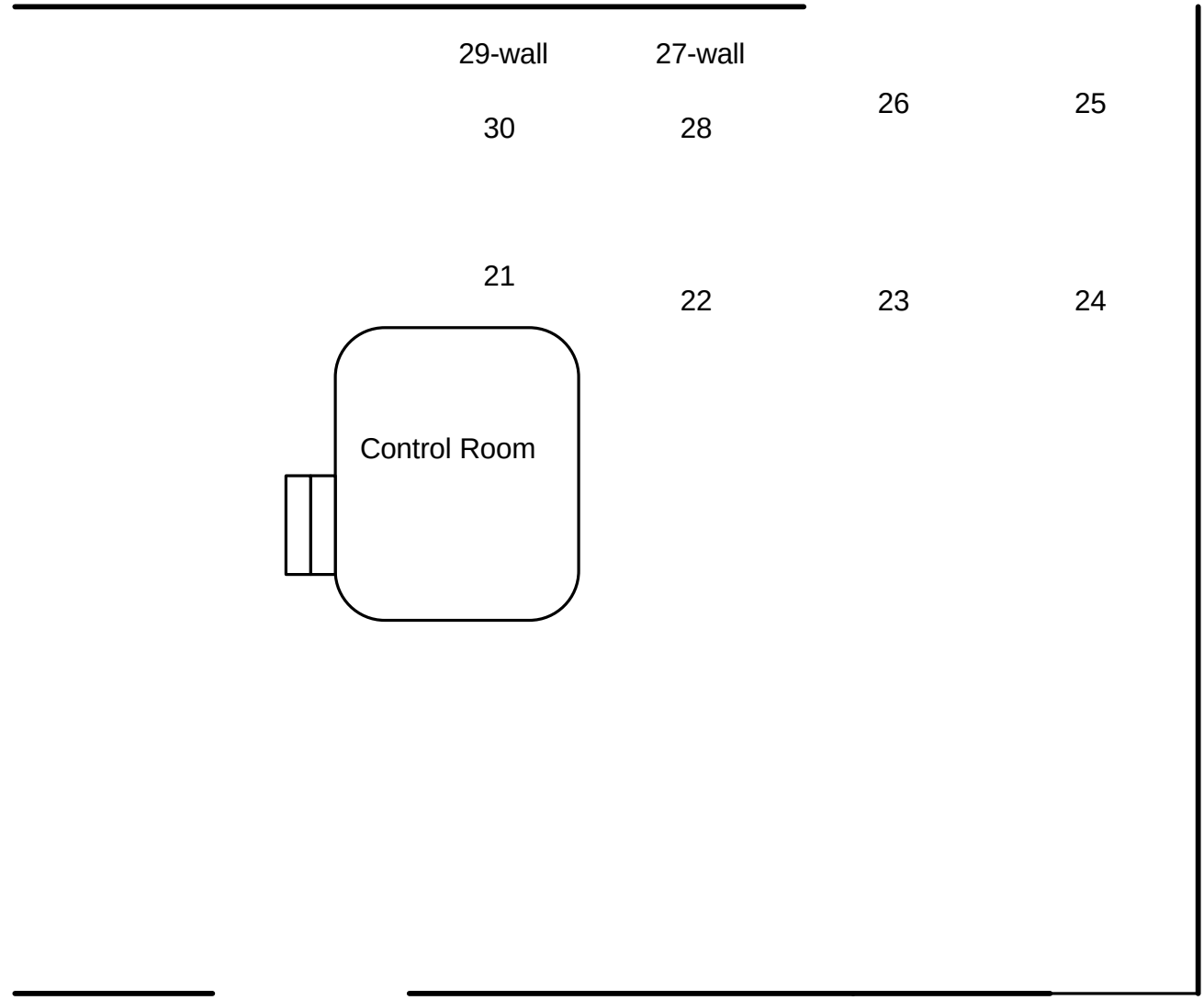
Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 45 **Survey Unit:** Wet Mill Floor

Notes: Unaffected. Dark line represent area where the wall remains intact.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
21	6	< MDA	21	95
22	5	< MDA	23	105
23	2	< MDA	25	115
24	1	< MDA	31	145
25	2	< MDA	25	115
26	1	< MDA	11	< MDA
27	4	< MDA	6	< MDA
28	5	< MDA	12	50
29	5	< MDA	4	< MDA
30	2	< MDA	37	175

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

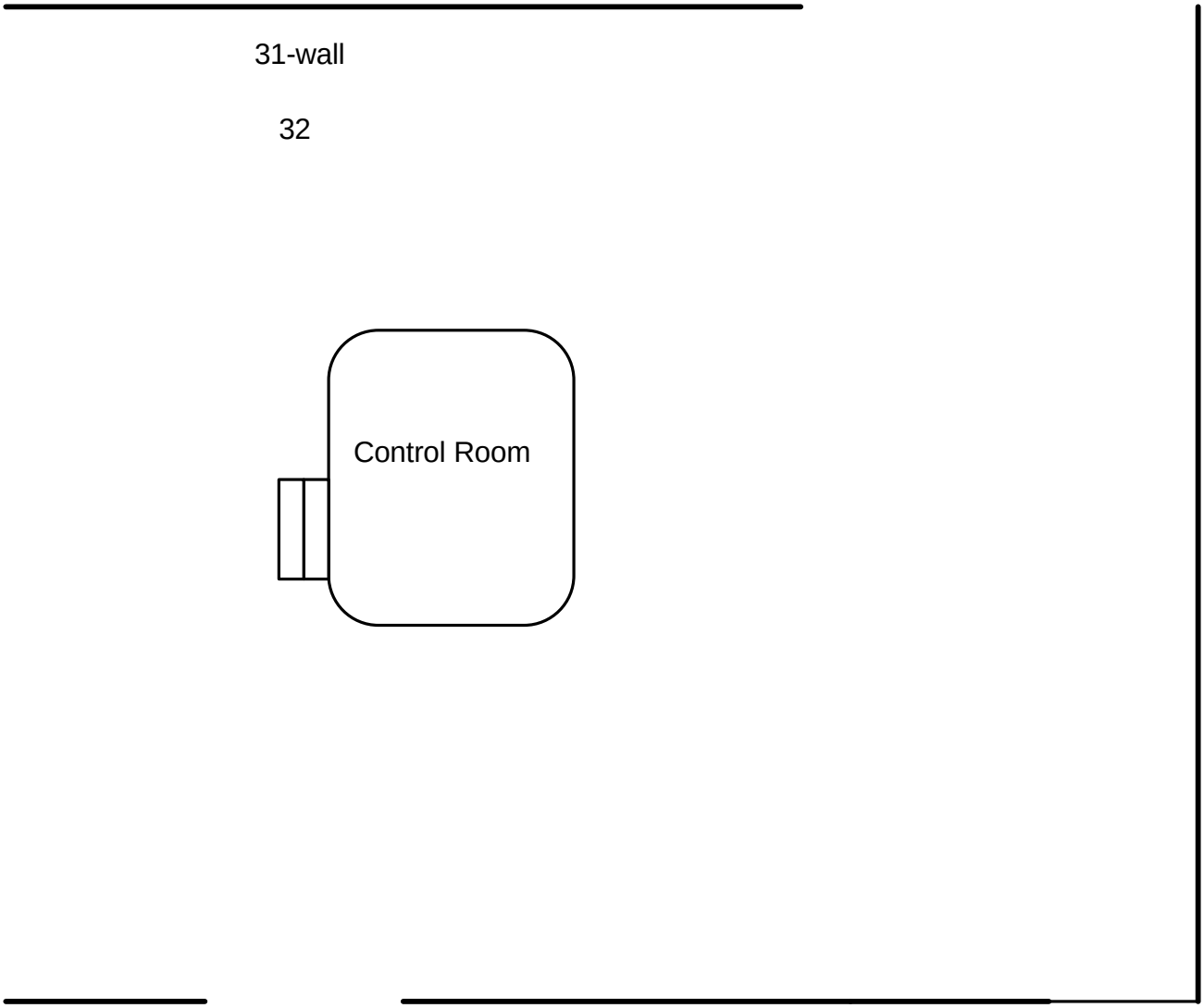
Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 45 **Survey Unit:** Wet Mill Floor

Notes: Unaffected. Dark line represent area where the wall remains intact.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
31	3	< MDA	8	< MDA
32	2	< MDA	19	85

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 10/3/01

MDA = 46 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, exterior upper section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	12	< MDA	13	< MDA
2	11	< MDA	22	95
3	12	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

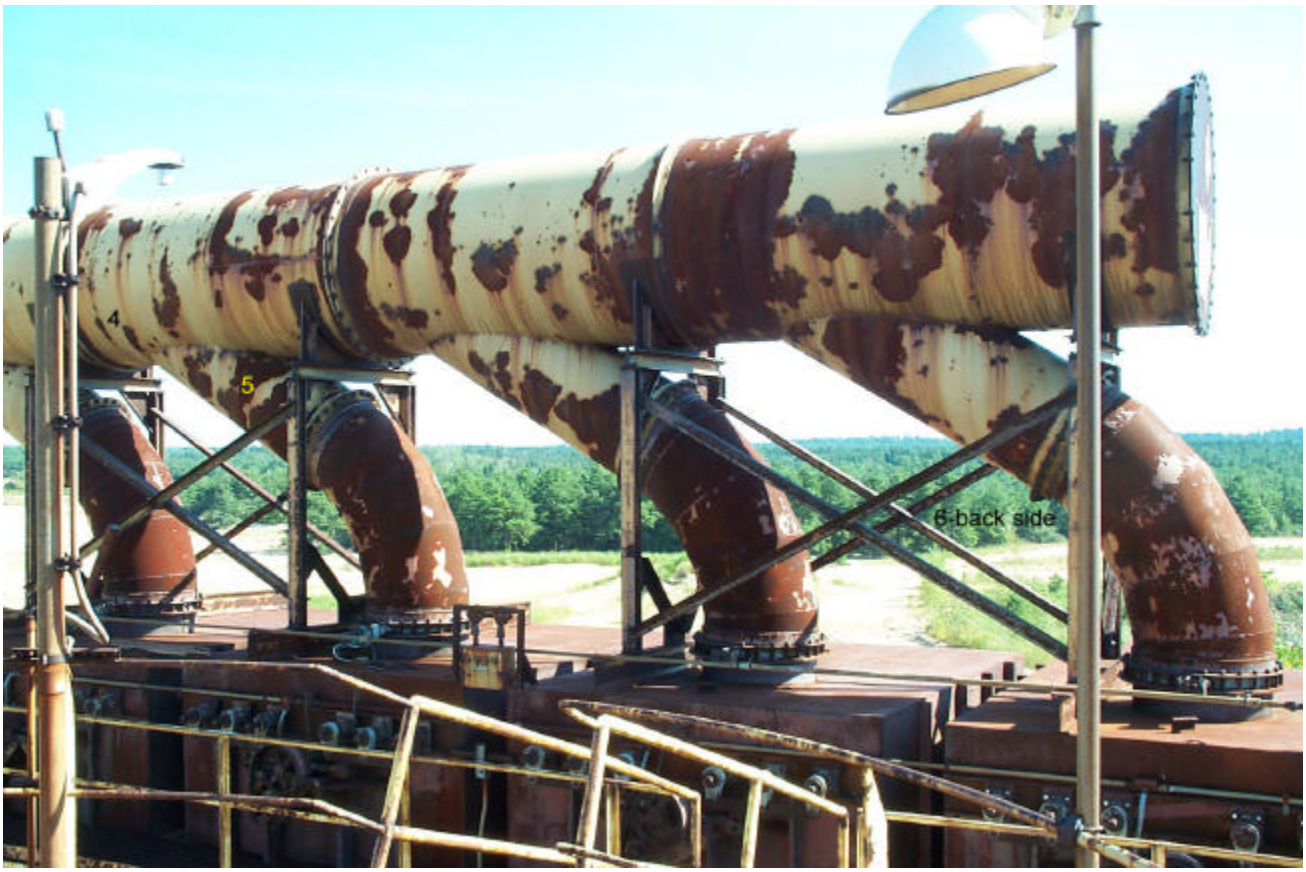
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, ducts

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
4	17	70	21	90
5	18	75	10	< MDA
6	11	< MDA	13	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, exterior mid section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	13	< MDA	11	< MDA
8	15	60	37	170

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, interior mid section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	20	85	59	280
10	14	55	23	100
11	13	< MDA	24	105

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

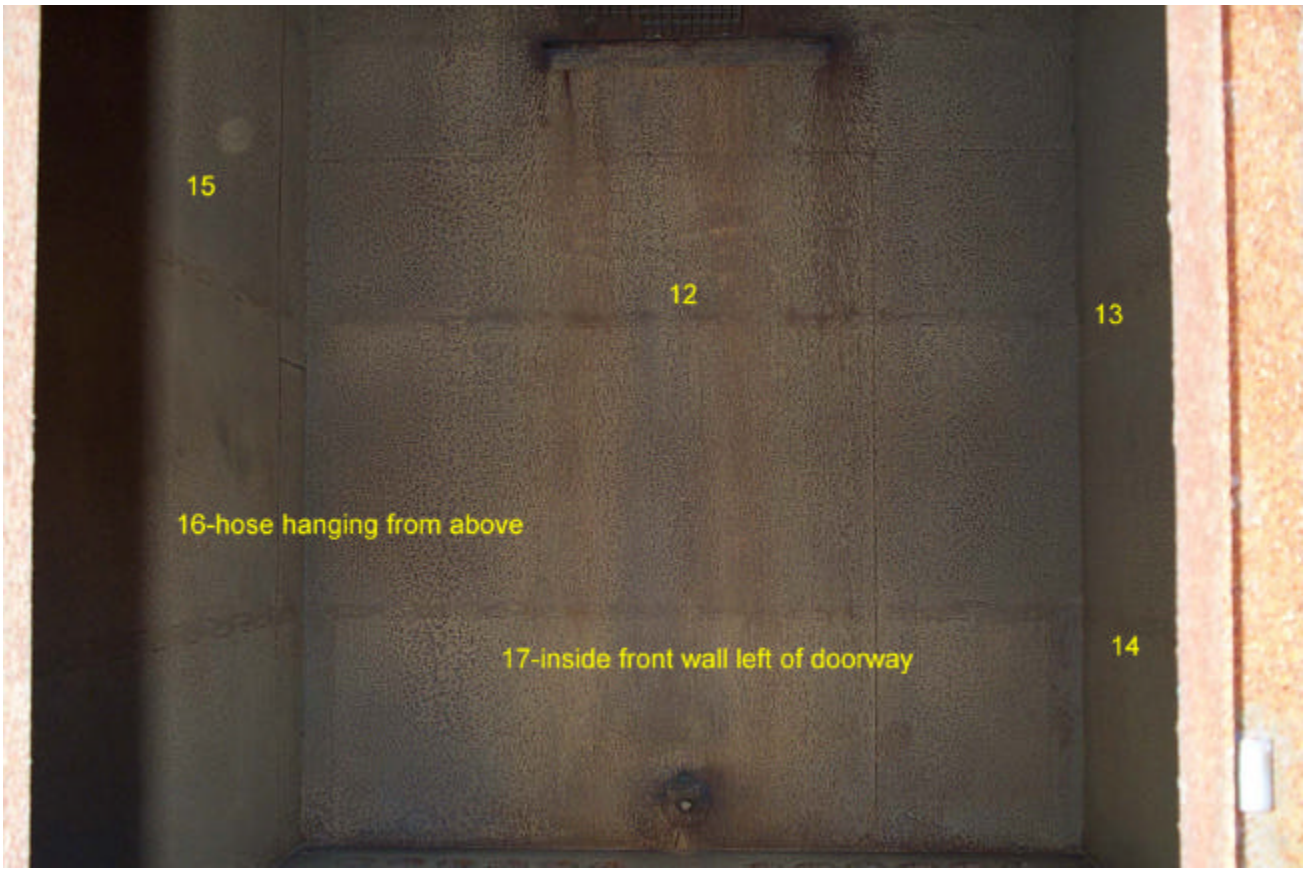
Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, interior mid section

Notes: Unaffected.



Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
12	7	< MDA	24	105
13	8	< MDA	29	130
14	6	< MDA	24	105
15	17	70	44	205
16	16	65	17	70
17	10	< MDA	25	110

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, interior mid section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
18	6	< MDA	8	< MDA
19	11	< MDA	123	600

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, interior lower section

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
20	8	< MDA	82	395
21	12	< MDA	94	455
22	5	< MDA	73	350
23	7	< MDA	49	230

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, interior lower section, duct entrance

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
24	17	70	139	680
25	7	< MDA	24	105

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/13/01

MDA = 54 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, ductwork

Notes: Unaffected. Representative of locations where survey was performed inside the duct.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
26	7	< MDA	147	705
27	3	< MDA	34	140
28	1	< MDA	31	125
29	8	< MDA	36	150
30	2	< MDA	34	140
31	8	< MDA	26	100

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/20/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/20/01

MDA = 71 dpm/100 cm2

Survey Unit Number: 46 **Survey Unit:** Bag House, blower assemby

Notes: Unaffected. Representative of locations where survey was performed inside the blower.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
32	1	< MDA	10	< MDA
33	2	< MDA	9	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/20/01

MDA = 71 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 9/20/01

MDA = 71 dpm/100 cm2

Survey Unit Number: Lab Rm 1 **Survey Unit:** Balance Room, left side

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	5	< MDA
2	3	< MDA	10	< MDA
3	8	< MDA	6	< MDA
4	4	< MDA	9	< MDA
5	3	< MDA	15	60

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 163048

Survey date: 9/6/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 163048

Survey date: 9/6/01

MDA = 54 dpm/100 cm2

Survey Unit Number: Lab Rm 1 **Survey Unit:** Balance Room, right side

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	5	< MDA	1	< MDA
7	6	< MDA	9	< MDA
8	5	< MDA	14	55
9	6	< MDA	18	75
10	2	< MDA	7	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 163048

Survey date: 9/6/01

MDA = 54 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 163048

Survey date: 9/6/01

MDA = 54 dpm/100 cm2

Survey Unit Number: Lab Rm 2 **Survey Unit:** Cabinet and sink

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	4	< MDA
2	3	< MDA	15	< MDA
3	3	< MDA	6	< MDA
4	3	< MDA	11	< MDA
5	1	< MDA	14	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 2 **Survey Unit:** Corner

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
6	3	< MDA	9	< MDA
7	3	< MDA	19	70
8	1	< MDA	17	< MDA
9	2	< MDA	3	< MDA
10	4	< MDA	2	< MDA
11	4	< MDA	7	< MDA
12	2	< MDA	8	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 2 **Survey Unit:** Large Hood

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
13	3	< MDA	3	< MDA
14	9	< MDA	8	< MDA
15	3	< MDA	2	< MDA
16	6	< MDA	7	< MDA
17	6	< MDA	11	< MDA
18	4	< MDA	5	< MDA
19	9	< MDA	2	< MDA
20	2	< MDA	1	< MDA
21	2	< MDA	2	< MDA
22	2	< MDA	14	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 3 **Survey Unit:** Entry Wall

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	5	< MDA
2	5	< MDA	2	< MDA
3	3	< MDA	6	< MDA
4	3	< MDA	9	40

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 3 **Survey Unit:** Left Wall

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	6	< MDA	16	75
6	1	< MDA	2	< MDA
7	4	< MDA	10	45
8	1	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 3 **Survey Unit:** Hood and wall

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
9	4	< MDA	1	< MDA
10	1	< MDA	7	< MDA
11	9	40	14	65
12	4	< MDA	5	< MDA
13	5	< MDA	25	120
14	2	< MDA	8	< MDA
15	1	< MDA	2	< MDA
16	1	< MDA	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 4 **Survey Unit:** Entryway

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	2	< MDA	2	< MDA
2	0	< MDA	2	< MDA
3	2	< MDA	4	< MDA
4	3	< MDA	12	55
5	1	< MDA	5	< MDA
6	3	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 4 **Survey Unit:** Reverse angle

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	3	< MDA	5	< MDA
8	1	< MDA	5	< MDA
9	4	< MDA	4	< MDA
10	0	< MDA	8	< MDA
11	4	< MDA	3	< MDA
12	6	< MDA	14	65
13	1	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 5 **Survey Unit:** Right side

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	4	< MDA	9	< MDA
2	1	< MDA	4	< MDA
3	6	< MDA	12	< MDA
4	1	< MDA	5	< MDA
5	6	< MDA	4	< MDA
6	4	< MDA	10	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 5 **Survey Unit:** Left side

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	8	< MDA	21	80
8	3	< MDA	7	< MDA
9	5	< MDA	5	< MDA
10	4	< MDA	2	< MDA
11	2	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 6 **Survey Unit:** Main View

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	9	< MDA	5	< MDA
2	3	< MDA	11	< MDA
3	2	< MDA	10	< MDA
4	7	< MDA	6	< MDA
5	2	< MDA	16	< MDA
6	4	< MDA	21	80
7	8	< MDA	2	< MDA
8	2	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 7 **Survey Unit:** Bathroom Entryway

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	13	60	8	< MDA
2	3	< MDA	5	< MDA
3	3	< MDA	5	< MDA
4	5	< MDA	1	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 7 **Survey Unit:** Entryway (from 4)

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	3	< MDA	17	80
2	1	< MDA	2	< MDA
3	3	< MDA	4	< MDA
4	2	< MDA	2	< MDA
5	4	< MDA	35	170
6	5	< MDA	12	55

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 7 **Survey Unit:** Bathroom Reverse angle

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
5	4	< MDA	12	55
6	7	< MDA	15	70
7	3	< MDA	5	< MDA
8	1	< MDA	8	< MDA
9	2	< MDA	78	385
10	6	< MDA		

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 7 **Survey Unit:** Reverse angle

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
7	8	< MDA	13	60
8	8	< MDA	31	150
9	6	< MDA	2	< MDA
10	5	< MDA	2	< MDA
11	9	40	2	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 134488

Survey date: 8/28/01

MDA = 37 dpm/100 cm2

Survey Unit Number: Lab Rm 9 **Survey Unit:** Sink

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
1	5	< MDA	7	< MDA
2	7	< MDA	17	< MDA
3	7	< MDA	12	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Survey Unit Number: Lab Rm 9 **Survey Unit:** Hood

Notes: Unaffected.

Area ID	Smear Counts (1 min.)	Smear Activity (dpm/100 cm^2)	Scaler Reading (cpm)	Direct Activity (dpm/100 cm^2)
4	5	< MDA	6	< MDA
5	7	< MDA	7	< MDA
6	4	< MDA	12	< MDA
7	4	< MDA	5	< MDA

Smear Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Scan and Scaler Info

Meter: Ludlum 12 w/43-68 probe

Serial Number: 161133

Survey date: 8/29/01

MDA = 66 dpm/100 cm2

Tire Lot #	Direct Reading (cpm)	Direct Activity (dpm)	Smear Counts (in 1 minute)	Removable Activity (dpm)
1	16	70	6	<MDA
2	24	110	5	<MDA
3	20	90	11	<MDA
4	23	105	4	<MDA
5	250	1240	11	<MDA
5 rpt	121	595	8	<MDA
5 rpt	44	210	9	<MDA
6	14	60	4	<MDA
7	44	210	8	<MDA
8	109	535	11	<MDA
9	8	<MDA	13	55
10	194	960	11	<MDA
11	92	450	8	<MDA
12	17	75	2	<MDA
13	22	100	5	<MDA
14	12	50	4	<MDA
15	15	65	5	<MDA
16	18	80	6	<MDA
17	62	300	1	<MDA
18	208	1030	1	<MDA
18 rpt	122	600	4	<MDA
18 rpt	69	335	7	<MDA
19	82	400	6	<MDA
20	21	95	2	<MDA
21	8	<MDA	3	<MDA
22	10	<MDA	4	<MDA
23	6	<MDA	2	<MDA
24	11	<MDA	1	<MDA
25	47	225	3	<MDA
26	56	270	6	<MDA
27	72	350	2	<MDA
28	288	1430	3	<MDA
28 rpt	123	605	5	<MDA
28 rpt	107	525	6	<MDA
29	18	80	1	<MDA
30	26	120	1	<MDA
31	82	400	3	<MDA
32	117	575	0	<MDA
33	67	325	3	<MDA
34	18	80	4	<MDA
35	22	100	0	<MDA
36	18	80	2	<MDA
37	20	90	5	<MDA
38	21	95	1	<MDA
39	17	75	4	<MDA
40	21	95	1	<MDA
41	171	845	3	<MDA
42	21	95	5	<MDA

Tire Lot #	Direct Reading (cpm)	Direct Activity (dpm)	Smear Counts (in 1 minute)	Removable Activity (dpm)
43	61	295	3	<MDA
44	17	75	4	<MDA
45	18	80	5	<MDA
46	22	100	2	<MDA
Inner tubes				
1	13	55	1	<MDA
2	14	60	3	<MDA
3	12	50	3	<MDA
4	13	55	4	<MDA

Drum release Data

Drum #	Reading 1	Reading 2	Avg. Reading	Avg. Activity
1	43	90	67	333
2	80	64	72	360
3	173	8	91	453
4	209	76	143	713
5	6	4	5	25
6	76	11	44	218
7	92	5	49	243
8	317	17	167	835
9	8	0	4	20
10	28	17	23	113
11	236	53	145	723
12	204	18	111	555
13	153	17	85	425
14	269	17	143	715
15	61	34	48	238
16	53	8	31	153
17	9	24	17	83
18	13	13	13	65
19	43	12	28	138
20	182	83	133	663
21	8	12	10	50
22	285	43	164	820
23	5	22	14	68
24	55	10	33	163
25	23	36	30	148
26	100	7	54	268
27	16	18	17	85
28	280	18	149	745
29	111	12	62	308
30	18	36	27	135
31	60	23	42	208
32	112	42	77	385
33	184	51	118	588
34	281	17	149	745

Activity in dpm/100cm^2 alpha

Drum release Data

Drum #	Reading 1	Reading 2	Avg. Reading	Avg. Activity
35	65	86	76	378
36	72	5	39	193
37	7	26	17	83
38	395	13	204	1020
39	152	22	87	435
40	263	8	136	678
41	17	283	150	750
42	14	9	12	58
43	84	22	53	265
44	105	20	63	313
45	75	9	42	210
46	133	17	75	375
47	35	23	29	145
48	32	4	18	90
49	6	3	5	23
50	352	12	182	910
51	209	7	108	540
52	10	10	10	50
53	18	14	16	80
54	36	22	29	145
55	61	13	37	185
56	8	13	11	53
57	60	15	38	188
58	291	22	157	783
60	293	57	175	875
61	14	15	15	73
62	39	52	46	228
63	33	4	19	93
64	61	14	38	188
65	40	7	24	118
66	19	15	17	85
67	102	149	126	628
68	526	34	280	1400
69	8	14	11	55

Activity in dpm/100cm^2 alpha

Drum release Data

Drum #	Reading 1	Reading 2	Avg. Reading	Avg. Activity
70	27	5	16	80
71	7	37	22	110
72	23	17	20	100
73	35	23	29	145
74	7	5	6	30
75	43	5	24	120
76	46	10	28	140
77	11	11	11	55
78	248	244	246	1230
79	249	16	133	663
80	21	6	14	68
81	100	36	68	340
82	417	6	212	1058
83	20	7	14	68
84	14	8	11	55
85	139	148	144	718
86	61	10	36	178
87	16	18	17	85
88	154	8	81	405
89	181	8	95	473
90	10	59	35	173
91	7	59	33	165
92	178	19	99	493
93	117	96	107	533
94	14	36	25	125
95	58	13	36	178
96	3	4	4	18
97	58	8	33	165
98	17	26	22	108
99	121	30	76	378
100	1	12	7	33
101	48	196	122	610

Activity in dpm/100cm^2 alpha

Drum release Data

Drum #	Reading 1	Reading 2	Avg. Reading	Avg. Activity
102	30	9	20	98
103	29	9	19	95
104	219	21	120	600
105	34	15	25	123
106	113	27	70	350
107	200	173	187	933
108	12	10	11	55
109	34	46	40	200
110	88	18	53	265
111	52	13	33	163
112	12	8	10	50
113	22	5	14	68
114	89	4	47	233
115	83	42	63	313
116	5	7	6	30
117	54	19	37	183
118	186	59	123	613

Activity in dpm/100cm^2 alpha

Drum Release Data

Drum #	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Avg. Reading	Avg. Activity
4	209	76	13	120	13	6	73	364
8	317	17	463	56	174	14	174	868
11	236	53	4	10	5	8	53	263
12	204	18	14	28	47	5	53	263
14	269	17	68	20	83	5	77	385
22	285	43	154	18	34	7	90	451
28	280	18	86	108	115	9	103	513
34	281	17	48	179	191	11	121	606
38	395	13	883	272	350	45	326	**1632**
40	263	8	130	52	64	11	88	440
50	352	12	123	156	284	4	155	776
51	209	7	201	79	414	11	154	768
58	291	22	44	451	91	6	151	754
60	293	57	248	396	260	10	211	**1053**
68	526	34	139	34	71	8	135	677
78	248	244	58	33	6	11	100	500
79	249	16	185	259	29	12	125	625
82	417	6	137	250	33	4	141	706
104	219	21	56	44	90	3	72	361
107	200	173	170	188	177	7	153	763

Activity in dpm/100cm^2 alpha

Lot #	Direct Reading (cpm)	Direct Activity (dpm)	Smear Counts (in 1 minute)	Removable Activity (dpm)
1	90	440	0	<MDA
2	51	245	2	<MDA
3	83	405	1	<MDA
4	77	375	0	<MDA
5	17	75	1	<MDA
6	27	125	2	<MDA
7	155	765	0	<MDA
8	98	480	0	<MDA
9	80	390	3	<MDA
10	17	75	3	<MDA
11	33	155	1	<MDA
12	9	<MDA	1	<MDA
13	15	65	3	<MDA
14	33	155	4	<MDA
15	10	<MDA	2	<MDA
16	6	<MDA	1	<MDA
17	6	<MDA	2	<MDA
18	13	55	2	<MDA
19	3	<MDA	4	<MDA
20	4	<MDA	5	<MDA
21	43	205	4	<MDA
22	10	<MDA	1	<MDA
23	8	<MDA	1	<MDA
24	25	115	7	<MDA
25	25	115	10	<MDA
26	23	105	12	50
27	13	55	5	<MDA
28	122	600	8	<MDA
29	31	145	10	<MDA
30	34	160	7	<MDA
31	27	125	7	<MDA
32	54	260	8	<MDA
33	93	455	6	<MDA
34	121	595	9	<MDA
35	119	585	10	<MDA
36	121	595	7	<MDA
37	153	755	10	<MDA
38	96	470	7	<MDA
39	134	660	10	<MDA
40	192	950	6	<MDA
41	186	920	10	<MDA
42	151	745	13	55
43	131	645	4	<MDA
44	133	655	7	<MDA
45	145	715	5	<MDA
46	148	730	7	<MDA
47	156	770	9	<MDA
48	150	740	9	<MDA

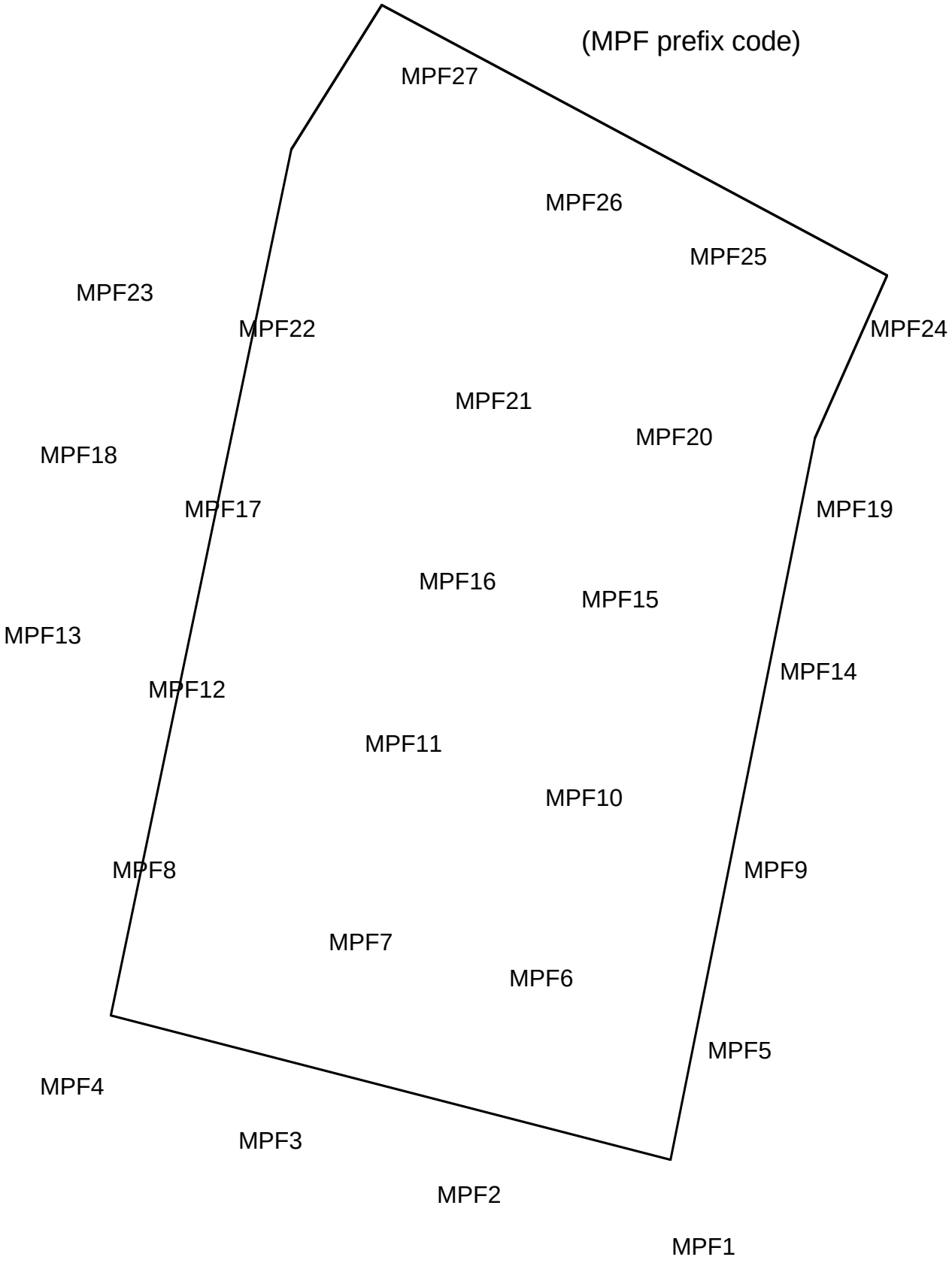
Activity is dpm/100cm^2 alpha

Lot #	Direct Reading (cpm)	Direct Activity (dpm)	Smear Counts (in 1 minute)	Removable Activity (dpm)
49	111	545	11	<MDA
50	99	485	5	<MDA
51	100	490	7	<MDA
52	34	160	6	<MDA
53	34	160	3	<MDA

Activity is dpm/100cm^2 alpha

APPENDIX B

Approximate locations of Monazite Pile Final Soil Samples



1 2 3 4 5 6 High Voltage Equipment 7 8 9

24 10

Wet Mill

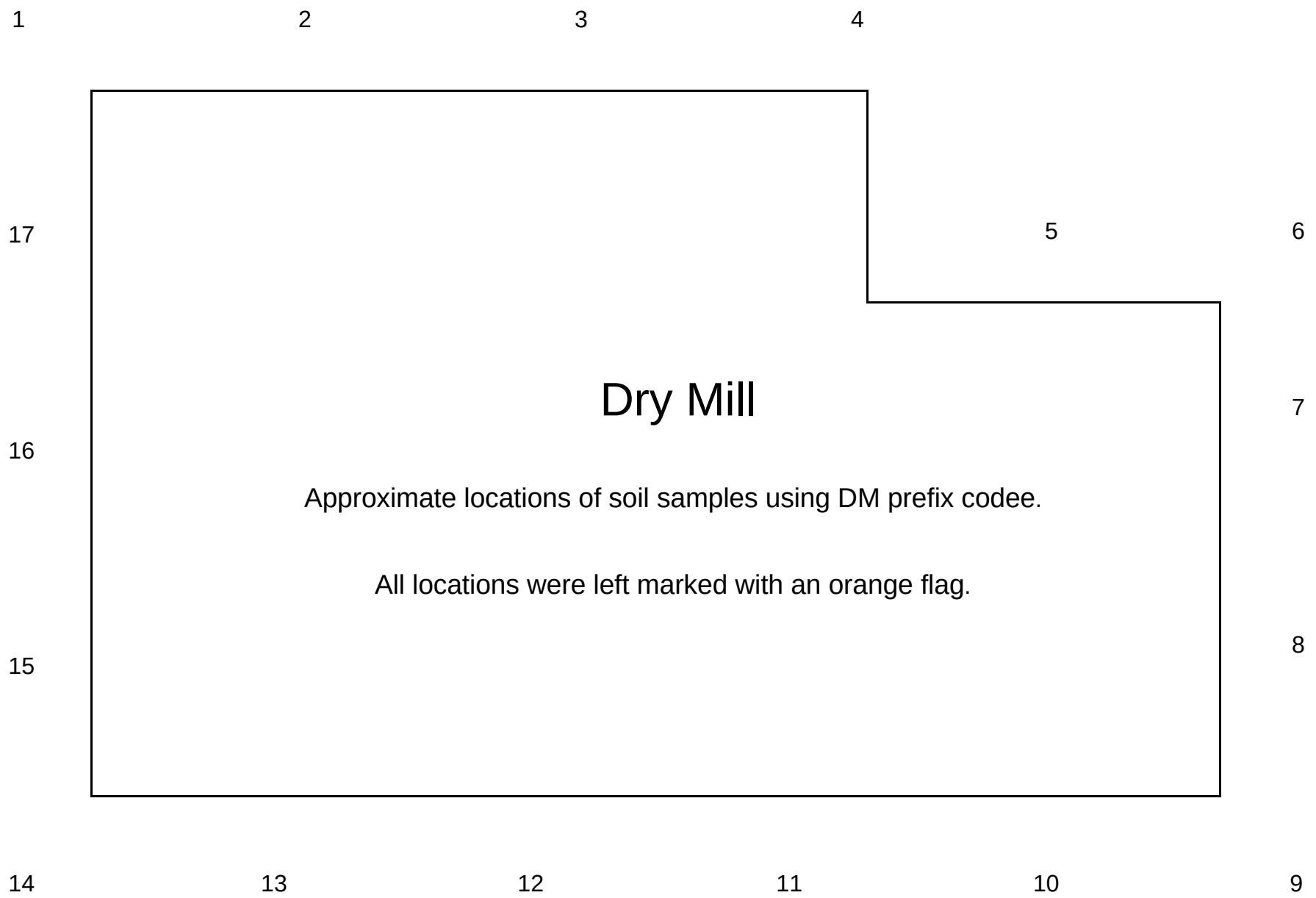
Approximate locations of soil samples using WM prefix codee.

23 11

All locations were left marked with an orange flag.

22 `2

21 20 19 18 17 16 15 14 13


1
2
3
4
17
5
6
Dry Mill
7
16
Approximate locations of soil samples using DM prefix codee.
All locations were left marked with an orange flag.
8
15
14
13
12
11
10
9

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Contact: Tom Bracke
Project: Routine Analytical

Report Date: November 8, 2001

Client Sample ID: WM-23
Sample ID: 50722001
Matrix: Soil
Collect Date: 11-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.30	+/-0.449	0.190	0.800	pCi/g		CRB	11/05/01	1641	118028	1
Americium-241	U	ND	+/-0.131	0.244	0.200	pCi/g						
Antimony-124	U	ND	+/-0.037	0.0606	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0761	0.140	0.200	pCi/g						
Barium-133	U	ND	+/-0.0393	0.066	0.100	pCi/g						
Barium-140	U	ND	+/-0.379	0.696	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.322	0.578	0.700	pCi/g						
Bismuth-212		1.74	+/-0.607	0.455	0.500	pCi/g						
Bismuth-214		1.24	+/-0.233	0.101	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0292	0.0489	0.050	pCi/g						
Cerium-141	U	ND	+/-0.069	0.126	0.100	pCi/g						
Cerium-144	U	ND	+/-0.189	0.345	0.500	pCi/g						
Cesium-134	U	ND	+/-0.031	0.0505	0.100	pCi/g						
Cesium-136	U	ND	+/-0.0979	0.272	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0365	0.049	0.100	pCi/g						
Chromium-51	U	ND	+/-0.390	0.720	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0329	0.0614	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0229	0.042	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0326	0.057	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0307	0.0583	0.100	pCi/g						
Europium-152	U	ND	+/-0.0797	0.145	0.200	pCi/g						
Europium-154	U	ND	+/-0.0883	0.153	0.500	pCi/g						
Europium-155	U	ND	+/-0.0933	0.175	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0321	0.059	0.100	pCi/g						
Iron-59	U	ND	+/-0.0737	0.132	0.300	pCi/g						
Lead-210	U	ND	+/-3.43	6.52	4.00	pCi/g						
Lead-212		2.80	+/-0.341	0.0903	0.100	pCi/g						
Lead-214		1.56	+/-0.240	0.106	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0347	0.0653	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0488	0.0751	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.918	1.62	1000	pCi/g						
Neptunium-239	U	ND	+/-0.187	0.297	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0296	0.0527	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0514	0.0968	0.050	pCi/g						
Potassium-40		0.857	+/-0.580	0.584	1.00	pCi/g						
Promethium-144	U	ND	+/-0.035	0.0519	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0369	0.0689	1.00	pCi/g						
Radium-228		2.30	+/-0.449	0.190	0.500	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-23
Sample ID: 50722001

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Ruthenium-106	U	ND	+/-0.279	0.482	0.800	pCi/g					
Silver-110m	U	ND	+/-0.0308	0.0585	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0318	0.0551	0.080	pCi/g					
Thallium-208		0.719	+/-0.114	0.060	0.080	pCi/g					
Thorium-230		1.24	+/-0.233	0.101	1.00	pCi/g					
Thorium-234	U	ND	+/-1.12	2.12	2.00	pCi/g					
Tin-113	U	ND	+/-0.038	0.0649	0.100	pCi/g					
Uranium-235	U	ND	+/-0.187	0.337	0.500	pCi/g					
Uranium-238	U	ND	+/-1.12	2.12	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0325	0.057	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0725	0.131	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0781	0.127	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-23
Sample ID: 50722001

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	VEIN	Project:	RNSC00199
Sample ID:	50722002	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	10-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		51.2	+/-7.92	0.578	0.800	pCi/g		CRB	11/05/01	1642	118028	1
Americium-241	U	ND	+/-0.390	0.753	0.200	pCi/g						
Antimony-124	U	ND	+/-0.128	0.217	0.100	pCi/g						
Antimony-125	U	ND	+/-0.282	0.515	0.200	pCi/g						
Barium-133	U	ND	+/-0.142	0.232	0.100	pCi/g						
Barium-140	U	ND	+/-1.45	2.50	0.500	pCi/g						
Beryllium-7	U	ND	+/-1.26	1.97	0.700	pCi/g						
Bismuth-212		32.4	+/-4.34	1.47	0.500	pCi/g						
Bismuth-214		45.3	+/-5.21	0.334	0.200	pCi/g						
Cerium-139	U	ND	+/-0.105	0.196	0.050	pCi/g						
Cerium-141	U	ND	+/-0.328	0.478	0.100	pCi/g						
Cerium-144	U	ND	+/-0.673	1.27	0.500	pCi/g						
Cesium-134	U	ND	+/-0.105	0.167	0.100	pCi/g						
Cesium-136	U	ND	+/-0.514	0.771	0.300	pCi/g						
Cesium-137	U	ND	+/-0.121	0.192	0.100	pCi/g						
Chromium-51	U	ND	+/-1.62	2.70	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.173	0.198	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0807	0.154	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.129	0.199	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0995	0.171	0.100	pCi/g						
Europium-152	U	ND	+/-0.306	0.537	0.200	pCi/g						
Europium-154	U	ND	+/-0.306	0.472	0.500	pCi/g						
Europium-155	U	ND	+/-0.719	0.600	0.500	pCi/g						
Iridium-192	U	ND	+/-0.115	0.213	0.100	pCi/g						
Iron-59	U	ND	+/-0.285	0.408	0.300	pCi/g						
Lead-210	U	ND	+/-9.86	18.6	4.00	pCi/g						
Lead-212		52.1	+/-5.80	0.333	0.100	pCi/g						
Lead-214		52.4	+/-6.10	0.380	0.100	pCi/g						
Manganese-54	U	ND	+/-0.188	0.175	0.100	pCi/g						
Mercury-203	U	ND	+/-0.304	0.303	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.40	6.01	1000	pCi/g						
Neptunium-239	U	ND	+/-1.22	1.11	2.00	pCi/g						
Niobium-94	U	ND	+/-0.142	0.184	1.00	pCi/g						
Niobium-95	U	ND	+/-0.376	0.276	0.050	pCi/g						
Potassium-40		3.53	+/-1.82	1.70	1.00	pCi/g						
Promethium-144	U	ND	+/-0.099	0.178	0.080	pCi/g						
Promethium-146	U	ND	+/-0.149	0.246	1.00	pCi/g						
Radium-228		51.2	+/-7.92	0.578	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.881	1.62	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: VEIN
Sample ID: 50722002

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.099	0.179	0.080	pCi/g					
Sodium-22	U	ND	+/-0.110	0.170	0.080	pCi/g					
Thallium-208		16.6	+/-1.82	0.190	0.080	pCi/g					
Thorium-230		45.3	+/-5.21	0.334	1.00	pCi/g					
Thorium-234		18.4	+/-8.21	6.00	2.00	pCi/g					
Tin-113	U	ND	+/-0.165	0.265	0.100	pCi/g					
Uranium-235		2.46	+/-1.31	1.32	0.500	pCi/g					
Uranium-238		18.4	+/-8.21	6.00	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.119	0.188	0.100	pCi/g					
Zinc-65	U	ND	+/-0.376	0.383	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.399	0.444	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-24	Project:	RNSC00199
Sample ID:	50722003	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.630	+/-0.171	0.115	0.800	pCi/g		CRB	11/05/01	1642	118028	1
Americium-241	U	ND	+/-0.101	0.179	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0259	0.0505	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0532	0.104	0.200	pCi/g						
Barium-133	U	ND	+/-0.0299	0.0463	0.100	pCi/g						
Barium-140	U	ND	+/-0.279	0.555	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.214	0.376	0.700	pCi/g						
Bismuth-212		0.458	+/-0.310	0.381	0.500	pCi/g						
Bismuth-214		0.403	+/-0.114	0.0739	0.200	pCi/g						
Cerium-139	U	ND	+/-0.020	0.0345	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0446	0.0794	0.100	pCi/g						
Cerium-144	U	ND	+/-0.123	0.228	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0236	0.0346	0.100	pCi/g						
Cesium-136	U	ND	+/-0.101	0.188	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0226	0.0381	0.100	pCi/g						
Chromium-51	U	ND	+/-0.326	0.601	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0301	0.0453	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0215	0.0281	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.023	0.0463	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0244	0.0486	0.100	pCi/g						
Europium-152	U	ND	+/-0.0634	0.0949	0.200	pCi/g						
Europium-154	U	ND	+/-0.0604	0.129	0.500	pCi/g						
Europium-155	U	ND	+/-0.058	0.112	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0267	0.0481	0.100	pCi/g						
Iron-59	U	ND	+/-0.0562	0.117	0.300	pCi/g						
Lead-210	U	ND	+/-2.91	4.97	4.00	pCi/g						
Lead-212		0.552	+/-0.095	0.0605	0.100	pCi/g						
Lead-214		0.517	+/-0.127	0.0869	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0214	0.0331	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0302	0.0547	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.580	1.17	1000	pCi/g						
Neptunium-239	U	ND	+/-0.127	0.206	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0228	0.0435	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0336	0.0592	0.050	pCi/g						
Potassium-40		1.76	+/-0.772	0.474	1.00	pCi/g						
Promethium-144	U	ND	+/-0.024	0.0466	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0277	0.0525	1.00	pCi/g						
Radium-228		0.630	+/-0.171	0.115	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.185	0.363	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-24
Sample ID: 50722003

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0207	0.0367	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0217	0.0463	0.080	pCi/g					
Thallium-208		0.170	+/-0.050	0.046	0.080	pCi/g					
Thorium-230		0.403	+/-0.114	0.0738	1.00	pCi/g					
Thorium-234	U	ND	+/-1.21	1.40	2.00	pCi/g					
Tin-113	U	ND	+/-0.0306	0.0494	0.100	pCi/g					
Uranium-235	U	ND	+/-0.118	0.224	0.500	pCi/g					
Uranium-238	U	ND	+/-1.21	1.40	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0227	0.0412	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0667	0.111	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0455	0.0941	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-19	Project:	RNSC00199
Sample ID:	50722004	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.81	+/-0.516	0.185	0.800	pCi/g		CRB	11/05/01	1643	118028	1
Americium-241	U	ND	+/-0.148	0.259	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0371	0.0653	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0845	0.154	0.200	pCi/g						
Barium-133	U	ND	+/-0.0384	0.0648	0.100	pCi/g						
Barium-140	U	ND	+/-0.451	0.749	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.331	0.631	0.700	pCi/g						
Bismuth-212		2.20	+/-0.619	0.429	0.500	pCi/g						
Bismuth-214		2.57	+/-0.362	0.107	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0298	0.0536	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0847	0.134	0.100	pCi/g						
Cerium-144	U	ND	+/-0.196	0.362	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0318	0.0536	0.100	pCi/g						
Cesium-136	U	ND	+/-0.123	0.250	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0324	0.0549	0.100	pCi/g						
Chromium-51	U	ND	+/-0.457	0.790	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0351	0.0645	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0234	0.0446	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0414	0.052	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0261	0.0452	0.100	pCi/g						
Europium-152	U	ND	+/-0.0834	0.153	0.200	pCi/g						
Europium-154	U	ND	+/-0.081	0.145	0.500	pCi/g						
Europium-155	U	ND	+/-0.178	0.175	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0353	0.0626	0.100	pCi/g						
Iron-59	U	ND	+/-0.0713	0.119	0.300	pCi/g						
Lead-210	U	ND	+/-3.89	6.65	4.00	pCi/g						
Lead-212		3.00	+/-0.353	0.0924	0.100	pCi/g						
Lead-214		3.08	+/-0.399	0.108	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0369	0.0607	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0656	0.0726	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.955	1.65	1000	pCi/g						
Neptunium-239	U	ND	+/-0.168	0.308	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0308	0.0556	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0611	0.108	0.050	pCi/g						
Potassium-40	U	ND	+/-0.446	0.536	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0308	0.0552	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0362	0.0652	1.00	pCi/g						
Radium-228		2.81	+/-0.516	0.185	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.271	0.501	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Contact: Tom Bracke
Project: Routine Analytical

Report Date: November 8, 2001

Client Sample ID: WM-19 Project: RNSC00199
Sample ID: 50722004 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0312	0.0569	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0292	0.0525	0.080	pCi/g					
Thallium-208		0.941	+/-0.129	0.0555	0.080	pCi/g					
Thorium-230		2.57	+/-0.362	0.107	1.00	pCi/g					
Thorium-234		2.78	+/-2.39	2.09	2.00	pCi/g					
Tin-113	U	ND	+/-0.136	0.0745	0.100	pCi/g					
Uranium-235	U	ND	+/-0.316	0.386	0.500	pCi/g					
Uranium-238		2.78	+/-2.39	2.09	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0318	0.0529	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0705	0.111	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0706	0.134	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-16	Project:	RNSC00199
Sample ID:	50722005	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		5.97	+/-0.481	0.265	0.800	pCi/g		CRB	11/05/01	1644	118028	1
Americium-241	U	ND	+/-0.379	0.487	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0562	0.0908	0.100	pCi/g						
Antimony-125	U	ND	+/-0.145	0.229	0.200	pCi/g						
Barium-133	U	ND	+/-0.0708	0.130	0.100	pCi/g						
Barium-140	U	ND	+/-0.585	1.06	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.500	0.899	0.700	pCi/g						
Bismuth-212		4.11	+/-0.883	0.606	0.500	pCi/g						
Bismuth-214		4.77	+/-0.332	0.147	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0467	0.0865	0.050	pCi/g						
Cerium-141	U	ND	+/-0.118	0.223	0.100	pCi/g						
Cerium-144	U	ND	+/-0.344	0.583	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0456	0.0735	0.100	pCi/g						
Cesium-136	U	ND	+/-0.179	0.293	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0471	0.086	0.100	pCi/g						
Chromium-51	U	ND	+/-0.688	1.19	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0579	0.0833	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0382	0.0724	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.052	0.0862	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0388	0.0812	0.100	pCi/g						
Europium-152	U	ND	+/-0.154	0.241	0.200	pCi/g						
Europium-154	U	ND	+/-0.123	0.219	0.500	pCi/g						
Europium-155	U	ND	+/-0.323	0.289	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0533	0.0963	0.100	pCi/g						
Iron-59	U	ND	+/-0.107	0.148	0.300	pCi/g						
Lead-210	U	ND	+/-9.51	15.6	4.00	pCi/g						
Lead-212		8.45	+/-0.382	0.147	0.100	pCi/g						
Lead-214		5.74	+/-0.319	0.166	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0472	0.0929	0.100	pCi/g						
Mercury-203	U	ND	+/-0.152	0.116	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.45	2.40	1000	pCi/g						
Neptunium-239	U	ND	+/-0.280	0.527	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0421	0.0801	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0852	0.149	0.050	pCi/g						
Potassium-40	U	ND	+/-0.539	1.01	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0509	0.0752	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0576	0.104	1.00	pCi/g						
Radium-228		5.97	+/-0.481	0.265	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.404	0.719	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-16
Sample ID: 50722005

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0434	0.0817	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0433	0.0788	0.080	pCi/g					
Thallium-208		2.31	+/-0.168	0.0828	0.080	pCi/g					
Thorium-230		4.77	+/-0.332	0.147	1.00	pCi/g					
Thorium-234		6.36	+/-4.22	3.76	2.00	pCi/g					
Tin-113	U	ND	+/-0.0695	0.124	0.100	pCi/g					
Uranium-235	U	ND	+/-0.317	0.608	0.500	pCi/g					
Uranium-238		6.36	+/-4.22	3.76	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0451	0.0841	0.100	pCi/g					
Zinc-65	U	ND	+/-0.101	0.157	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0962	0.182	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-17	Project:	RNSC00199
Sample ID:	50722006	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		7.27	+/-1.23	0.248	0.800	pCi/g		CRB	11/05/01	1647	118028	1
Americium-241	U	ND	+/-0.404	0.541	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0506	0.0931	0.100	pCi/g						
Antimony-125	U	ND	+/-0.118	0.213	0.200	pCi/g						
Barium-133	U	ND	+/-0.0589	0.0948	0.100	pCi/g						
Barium-140	U	ND	+/-0.554	0.969	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.473	0.799	0.700	pCi/g						
Bismuth-212		4.75	+/-0.951	0.612	0.500	pCi/g						
Bismuth-214		5.99	+/-0.729	0.137	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0524	0.0824	0.050	pCi/g						
Cerium-141	U	ND	+/-0.127	0.201	0.100	pCi/g						
Cerium-144	U	ND	+/-0.315	0.566	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0457	0.0671	0.100	pCi/g						
Cesium-136	U	ND	+/-0.177	0.313	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0522	0.0788	0.100	pCi/g						
Chromium-51	U	ND	+/-0.602	1.09	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0431	0.0784	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0387	0.0705	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0534	0.0864	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0423	0.078	0.100	pCi/g						
Europium-152	U	ND	+/-0.126	0.226	0.200	pCi/g						
Europium-154	U	ND	+/-0.119	0.213	0.500	pCi/g						
Europium-155	U	ND	+/-0.250	0.287	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0476	0.086	0.100	pCi/g						
Iron-59	U	ND	+/-0.102	0.174	0.300	pCi/g						
Lead-210	U	ND	+/-11.5	19.6	4.00	pCi/g						
Lead-212		7.67	+/-0.878	0.157	0.100	pCi/g						
Lead-214		7.32	+/-0.879	0.161	0.100	pCi/g						
Manganese-54	U	ND	+/-0.072	0.0809	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0904	0.110	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.32	2.28	1000	pCi/g						
Neptunium-239	U	ND	+/-0.275	0.490	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0433	0.0786	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0911	0.151	0.050	pCi/g						
Potassium-40		0.954	+/-0.488	0.951	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0442	0.074	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0573	0.106	1.00	pCi/g						
Radium-228		7.27	+/-1.23	0.248	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.393	0.708	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-17
Sample ID: 50722006

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0369	0.0771	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0427	0.0767	0.080	pCi/g					
Thallium-208		2.25	+/-0.280	0.0816	0.080	pCi/g					
Thorium-230		5.99	+/-0.729	0.137	1.00	pCi/g					
Thorium-234		7.85	+/-4.71	4.20	2.00	pCi/g					
Tin-113	U	ND	+/-0.0704	0.107	0.100	pCi/g					
Uranium-235		0.587	+/-0.455	0.583	0.500	pCi/g					
Uranium-238		7.85	+/-4.71	4.20	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0455	0.0891	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0955	0.151	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.114	0.190	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-14	Project:	RNSC00199
Sample ID:	50722007	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.701	+/-0.204	0.133	0.800	pCi/g		CRB	11/05/01	1648	118028	1
Americium-241	U	ND	+/-0.136	0.248	0.200	pCi/g						
Antimony-124	U	ND	+/-0.022	0.0421	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0488	0.0902	0.200	pCi/g						
Barium-133	U	ND	+/-0.0281	0.0466	0.100	pCi/g						
Barium-140	U	ND	+/-0.256	0.487	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.205	0.384	0.700	pCi/g						
Bismuth-212		0.471	+/-0.274	0.289	0.500	pCi/g						
Bismuth-214		0.519	+/-0.132	0.0676	0.200	pCi/g						
Cerium-139	U	ND	+/-0.017	0.0304	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0437	0.0809	0.100	pCi/g						
Cerium-144	U	ND	+/-0.129	0.214	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0178	0.0326	0.100	pCi/g						
Cesium-136	U	ND	+/-0.0995	0.170	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0244	0.045	0.100	pCi/g						
Chromium-51	U	ND	+/-0.285	0.541	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0239	0.045	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0134	0.0269	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0215	0.0423	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0194	0.036	0.100	pCi/g						
Europium-152	U	ND	+/-0.0573	0.102	0.200	pCi/g						
Europium-154	U	ND	+/-0.0399	0.088	0.500	pCi/g						
Europium-155	U	ND	+/-0.0597	0.114	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0244	0.0442	0.100	pCi/g						
Iron-59	U	ND	+/-0.053	0.098	0.300	pCi/g						
Lead-210	U	ND	+/-6.16	11.5	4.00	pCi/g						
Lead-212		0.590	+/-0.101	0.0614	0.100	pCi/g						
Lead-214		0.451	+/-0.118	0.0801	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0231	0.0442	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0252	0.0493	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.614	1.17	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0924	0.166	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0194	0.0382	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0326	0.0603	0.050	pCi/g						
Potassium-40	U	ND	+/-0.478	0.429	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0203	0.0373	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0251	0.0493	1.00	pCi/g						
Radium-228		0.701	+/-0.204	0.133	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.194	0.372	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-14
Sample ID: 50722007

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0217	0.0402	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0143	0.0316	0.080	pCi/g					
Thallium-208		0.178	+/-0.0505	0.0335	0.080	pCi/g					
Thorium-230		0.519	+/-0.132	0.0676	1.00	pCi/g					
Thorium-234	U	ND	+/-1.45	1.80	2.00	pCi/g					
Tin-113	U	ND	+/-0.0282	0.0497	0.100	pCi/g					
Uranium-235	U	ND	+/-0.116	0.221	0.500	pCi/g					
Uranium-238	U	ND	+/-1.45	1.80	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.021	0.0409	0.100	pCi/g					
Zinc-65	U	ND	+/-0.041	0.0676	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0412	0.0861	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-18	Project:	RNSC00199
Sample ID:	50722008	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		9.30	+/-1.48	0.286	0.800	pCi/g		CRB	11/05/01	1648	118028	1
Americium-241	U	ND	+/-0.0686	0.122	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0554	0.100	0.100	pCi/g						
Antimony-125	U	ND	+/-0.154	0.243	0.200	pCi/g						
Barium-133	U	ND	+/-0.0624	0.095	0.100	pCi/g						
Barium-140	U	ND	+/-0.715	1.15	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.529	0.847	0.700	pCi/g						
Bismuth-212		6.32	+/-1.25	0.678	0.500	pCi/g						
Bismuth-214		10.2	+/-1.29	0.153	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0425	0.0805	0.050	pCi/g						
Cerium-141	U	ND	+/-0.161	0.191	0.100	pCi/g						
Cerium-144	U	ND	+/-0.268	0.502	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0481	0.0755	0.100	pCi/g						
Cesium-136	U	ND	+/-0.201	0.363	0.300	pCi/g						
Cesium-137	U	ND	+/-0.056	0.0887	0.100	pCi/g						
Chromium-51	U	ND	+/-0.785	1.15	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0571	0.100	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0343	0.0595	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0656	0.0983	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0488	0.0853	0.100	pCi/g						
Europium-152	U	ND	+/-0.135	0.234	0.200	pCi/g						
Europium-154	U	ND	+/-0.148	0.229	0.500	pCi/g						
Europium-155	U	ND	+/-0.231	0.225	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0506	0.0899	0.100	pCi/g						
Iron-59	U	ND	+/-0.136	0.191	0.300	pCi/g						
Lead-210		5.63	+/-1.23	0.923	4.00	pCi/g						
Lead-212		9.92	+/-1.48	0.158	0.100	pCi/g						
Lead-214		11.6	+/-1.53	0.163	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0636	0.0957	0.100	pCi/g						
Mercury-203	U	ND	+/-0.124	0.128	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.48	2.43	1000	pCi/g						
Neptunium-239	U	ND	+/-0.357	0.433	2.00	pCi/g						
Niobium-94	U	ND	+/-0.048	0.0869	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0995	0.162	0.050	pCi/g						
Potassium-40	U	ND	+/-0.866	0.881	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0483	0.086	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0618	0.109	1.00	pCi/g						
Radium-228		9.30	+/-1.48	0.286	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.432	0.764	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-18
Sample ID: 50722008

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0482	0.0892	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0532	0.0825	0.080	pCi/g					
Thallium-208		2.93	+/-0.376	0.091	0.080	pCi/g					
Thorium-230		10.2	+/-1.29	0.153	1.00	pCi/g					
Thorium-234		8.19	+/-1.98	1.24	2.00	pCi/g					
Tin-113	U	ND	+/-0.115	0.120	0.100	pCi/g					
Uranium-235		0.957	+/-0.570	0.569	0.500	pCi/g					
Uranium-238		8.19	+/-1.98	1.24	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0516	0.0926	0.100	pCi/g					
Zinc-65	U	ND	+/-0.166	0.172	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.166	0.218	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-20	Project:	RNSC00199
Sample ID:	50722009	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.10	+/-0.413	0.163	0.800	pCi/g		CRB	11/05/01	1649	118028	1
Americium-241	U	ND	+/-0.235	0.368	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0305	0.060	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0752	0.129	0.200	pCi/g						
Barium-133	U	ND	+/-0.0356	0.0623	0.100	pCi/g						
Barium-140	U	ND	+/-0.350	0.619	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.272	0.515	0.700	pCi/g						
Bismuth-212		1.10	+/-0.499	0.393	0.500	pCi/g						
Bismuth-214		2.17	+/-0.295	0.0911	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0262	0.0487	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0825	0.125	0.100	pCi/g						
Cerium-144	U	ND	+/-0.186	0.321	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0274	0.0461	0.100	pCi/g						
Cesium-136	U	ND	+/-0.117	0.200	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0849	0.0492	0.100	pCi/g						
Chromium-51	U	ND	+/-0.388	0.700	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0301	0.0581	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0208	0.0396	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0299	0.0462	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0249	0.0482	0.100	pCi/g						
Europium-152	U	ND	+/-0.081	0.140	0.200	pCi/g						
Europium-154	U	ND	+/-0.0727	0.150	0.500	pCi/g						
Europium-155	U	ND	+/-0.156	0.184	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0307	0.056	0.100	pCi/g						
Iron-59	U	ND	+/-0.0761	0.120	0.300	pCi/g						
Lead-210	U	ND	+/-9.63	16.1	4.00	pCi/g						
Lead-212		2.29	+/-0.277	0.0853	0.100	pCi/g						
Lead-214		2.68	+/-0.360	0.100	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0314	0.0511	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0433	0.0724	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.843	1.53	1000	pCi/g						
Neptunium-239	U	ND	+/-0.273	0.295	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0254	0.0498	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0513	0.0909	0.050	pCi/g						
Potassium-40	U	ND	+/-0.430	0.481	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0243	0.0416	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0356	0.0632	1.00	pCi/g						
Radium-228		2.10	+/-0.413	0.163	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.236	0.459	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-20
Sample ID: 50722009

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0308	0.0502	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0261	0.054	0.080	pCi/g					
Thallium-208		0.639	+/-0.106	0.0491	0.080	pCi/g					
Thorium-230		2.17	+/-0.295	0.0911	1.00	pCi/g					
Thorium-234	U	ND	+/-2.47	2.89	2.00	pCi/g					
Tin-113	U	ND	+/-0.0391	0.0666	0.100	pCi/g					
Uranium-235	U	ND	+/-0.288	0.349	0.500	pCi/g					
Uranium-238	U	ND	+/-2.47	2.89	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0301	0.057	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0695	0.108	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0609	0.117	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-22	Project:	RNSC00199
Sample ID:	50722010	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.750	+/-0.239	0.171	0.800	pCi/g		CRB	11/05/01	1649	118028	1
Americium-241	U	ND	+/-0.0503	0.0876	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0437	0.067	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0714	0.135	0.200	pCi/g						
Barium-133	U	ND	+/-0.0413	0.0688	0.100	pCi/g						
Barium-140	U	ND	+/-0.376	0.718	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.279	0.555	0.700	pCi/g						
Bismuth-212		0.533	+/-0.455	0.463	0.500	pCi/g						
Bismuth-214		0.645	+/-0.177	0.114	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0238	0.0432	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0581	0.110	0.100	pCi/g						
Cerium-144	U	ND	+/-0.153	0.269	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0323	0.0524	0.100	pCi/g						
Cesium-136	U	ND	+/-0.141	0.267	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0344	0.0641	0.100	pCi/g						
Chromium-51	U	ND	+/-0.373	0.640	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0387	0.070	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.019	0.0346	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0359	0.0637	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0331	0.0578	0.100	pCi/g						
Europium-152	U	ND	+/-0.0776	0.143	0.200	pCi/g						
Europium-154	U	ND	+/-0.0831	0.155	0.500	pCi/g						
Europium-155	U	ND	+/-0.074	0.141	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0305	0.0557	0.100	pCi/g						
Iron-59	U	ND	+/-0.0849	0.161	0.300	pCi/g						
Lead-210		1.08	+/-0.874	0.721	4.00	pCi/g						
Lead-212		0.776	+/-0.142	0.077	0.100	pCi/g						
Lead-214		0.642	+/-0.166	0.0978	0.100	pCi/g						
Manganese-54	U	ND	+/-0.029	0.0548	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0384	0.0661	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.915	1.72	1000	pCi/g						
Neptunium-239	U	ND	+/-0.139	0.254	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0311	0.0608	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0522	0.0894	0.050	pCi/g						
Potassium-40		1.67	+/-0.649	0.467	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0365	0.0629	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0357	0.0723	1.00	pCi/g						
Radium-228		0.750	+/-0.239	0.171	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.291	0.518	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-22
Sample ID: 50722010

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0324	0.0601	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0299	0.0556	0.080	pCi/g					
Thallium-208		0.259	+/-0.0745	0.0541	0.080	pCi/g					
Thorium-230		0.645	+/-0.177	0.114	1.00	pCi/g					
Thorium-234	U	ND	+/-1.02	0.873	2.00	pCi/g					
Tin-113	U	ND	+/-0.0394	0.0666	0.100	pCi/g					
Uranium-235	U	ND	+/-0.157	0.297	0.500	pCi/g					
Uranium-238	U	ND	+/-1.02	0.873	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.030	0.0599	0.100	pCi/g					
Zinc-65	U	ND	+/-0.114	0.122	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.070	0.139	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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X Lab-specific qualifier - must be fully described in case narrative and data summary package

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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-21	Project:	RNSC00199
Sample ID:	50722011	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		4.14	+/-0.779	0.382	0.800	pCi/g		CRB	11/05/01	1650	118028	1
Americium-241	U	ND	+/-0.252	0.310	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0898	0.136	0.100	pCi/g						
Antimony-125	U	ND	+/-0.162	0.303	0.200	pCi/g						
Barium-133	U	ND	+/-0.102	0.165	0.100	pCi/g						
Barium-140	U	ND	+/-0.787	1.41	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.622	1.11	0.700	pCi/g						
Bismuth-212		2.91	+/-1.15	0.936	0.500	pCi/g						
Bismuth-214		4.60	+/-0.743	0.216	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0586	0.107	0.050	pCi/g						
Cerium-141	U	ND	+/-0.152	0.279	0.100	pCi/g						
Cerium-144	U	ND	+/-0.468	0.743	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0706	0.114	0.100	pCi/g						
Cesium-136	U	ND	+/-0.253	0.483	0.300	pCi/g						
Cesium-137	U	ND	+/-0.168	0.111	0.100	pCi/g						
Chromium-51	U	ND	+/-0.790	1.47	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0535	0.122	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0501	0.0918	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0746	0.126	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0573	0.113	0.100	pCi/g						
Europium-152	U	ND	+/-0.192	0.316	0.200	pCi/g						
Europium-154	U	ND	+/-0.184	0.310	0.500	pCi/g						
Europium-155	U	ND	+/-0.197	0.368	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0629	0.110	0.100	pCi/g						
Iron-59	U	ND	+/-0.142	0.251	0.300	pCi/g						
Lead-210	U	ND	+/-1.91	3.25	4.00	pCi/g						
Lead-212		4.62	+/-0.780	0.180	0.100	pCi/g						
Lead-214		5.11	+/-0.901	0.211	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0816	0.121	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0817	0.154	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.84	3.29	1000	pCi/g						
Neptunium-239	U	ND	+/-0.358	0.652	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0629	0.116	1.00	pCi/g						
Niobium-95	U	ND	+/-0.130	0.227	0.050	pCi/g						
Potassium-40	U	ND	+/-0.606	1.20	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0635	0.110	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0725	0.138	1.00	pCi/g						
Radium-228		4.14	+/-0.779	0.382	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.580	1.03	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-21
Sample ID: 50722011

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0603	0.100	0.080	pCi/g					
Sodium-22	U	ND	+/-0.066	0.111	0.080	pCi/g					
Thallium-208		1.37	+/-0.251	0.105	0.080	pCi/g					
Thorium-230		4.60	+/-0.743	0.216	1.00	pCi/g					
Thorium-234	U	ND	+/-4.01	2.96	2.00	pCi/g					
Tin-113	U	ND	+/-0.0831	0.151	0.100	pCi/g					
Uranium-235	U	ND	+/-0.413	0.754	0.500	pCi/g					
Uranium-238	U	ND	+/-4.01	2.96	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0532	0.110	0.100	pCi/g					
Zinc-65	U	ND	+/-0.224	0.224	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.163	0.254	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-15	Project:	RNSC00199
Sample ID:	50722012	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	11-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		25.6	+/-0.977	0.479	0.800	pCi/g		CRB	11/05/01	1726	118028	1
Americium-241	U	ND	+/-0.138	0.241	0.200	pCi/g						
Antimony-124	U	ND	+/-0.103	0.175	0.100	pCi/g						
Antimony-125	U	ND	+/-0.216	0.394	0.200	pCi/g						
Barium-133	U	ND	+/-0.112	0.173	0.100	pCi/g						
Barium-140	U	ND	+/-1.07	1.85	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.869	1.53	0.700	pCi/g						
Bismuth-212		15.0	+/-1.73	1.21	0.500	pCi/g						
Bismuth-214		9.62	+/-0.428	0.282	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0761	0.135	0.050	pCi/g						
Cerium-141	U	ND	+/-0.189	0.345	0.100	pCi/g						
Cerium-144	U	ND	+/-0.504	0.898	0.500	pCi/g						
Cesium-134	U	ND	+/-0.091	0.134	0.100	pCi/g						
Cesium-136	U	ND	+/-0.320	0.570	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0982	0.162	0.100	pCi/g						
Chromium-51	U	ND	+/-1.71	1.94	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0882	0.155	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0583	0.106	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0954	0.161	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0745	0.127	0.100	pCi/g						
Europium-152	U	ND	+/-0.226	0.395	0.200	pCi/g						
Europium-154	U	ND	+/-0.385	0.343	0.500	pCi/g						
Europium-155	U	ND	+/-0.368	0.405	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0842	0.153	0.100	pCi/g						
Iron-59	U	ND	+/-0.201	0.289	0.300	pCi/g						
Lead-210		5.96	+/-2.08	1.73	4.00	pCi/g						
Lead-212		28.6	+/-0.425	0.231	0.100	pCi/g						
Lead-214		11.1	+/-0.461	0.274	0.100	pCi/g						
Manganese-54	U	ND	+/-0.263	0.130	0.100	pCi/g						
Mercury-203	U	ND	+/-0.195	0.218	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.97	4.41	1000	pCi/g						
Neptunium-239	U	ND	+/-0.701	0.770	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0874	0.152	1.00	pCi/g						
Niobium-95	U	ND	+/-0.266	0.281	0.050	pCi/g						
Potassium-40	U	ND	+/-0.840	1.52	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0899	0.153	0.080	pCi/g						
Promethium-146	U	ND	+/-0.155	0.197	1.00	pCi/g						
Radium-228		25.6	+/-0.977	0.479	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.781	1.37	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-15
Sample ID: 50722012

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.103	0.153	0.080	pCi/g					
Sodium-22	U	ND	+/-0.139	0.124	0.080	pCi/g					
Thallium-208		8.72	+/-0.284	0.155	0.080	pCi/g					
Thorium-230		9.62	+/-0.428	0.282	1.00	pCi/g					
Thorium-234		9.55	+/-2.34	2.37	2.00	pCi/g					
Tin-113	U	ND	+/-0.114	0.202	0.100	pCi/g					
Uranium-235	U	ND	+/-0.504	0.920	0.500	pCi/g					
Uranium-238		9.55	+/-2.34	2.37	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0916	0.171	0.100	pCi/g					
Zinc-65	U	ND	+/-0.288	0.268	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.289	0.384	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-11	Project:	RNSC00199
Sample ID:	50722013	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		20.3	+/-2.67	0.350	0.800	pCi/g		CRB	11/05/01	1726	118028	1
Americium-241	U	ND	+/-0.114	0.204	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0825	0.144	0.100	pCi/g						
Antimony-125	U	ND	+/-0.164	0.300	0.200	pCi/g						
Barium-133	U	ND	+/-0.0817	0.133	0.100	pCi/g						
Barium-140	U	ND	+/-1.27	2.24	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.747	1.33	0.700	pCi/g						
Bismuth-212		12.7	+/-2.20	0.984	0.500	pCi/g						
Bismuth-214		5.78	+/-0.825	0.208	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0604	0.110	0.050	pCi/g						
Cerium-141	U	ND	+/-0.171	0.316	0.100	pCi/g						
Cerium-144	U	ND	+/-0.384	0.713	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0664	0.0998	0.100	pCi/g						
Cesium-136	U	ND	+/-0.361	0.646	0.300	pCi/g						
Cesium-137	U	ND	+/-0.086	0.124	0.100	pCi/g						
Chromium-51	U	ND	+/-1.20	1.83	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0739	0.133	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0455	0.0835	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0781	0.127	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0629	0.102	0.100	pCi/g						
Europium-152	U	ND	+/-0.186	0.300	0.200	pCi/g						
Europium-154	U	ND	+/-0.155	0.263	0.500	pCi/g						
Europium-155	U	ND	+/-0.414	0.325	0.500	pCi/g						
Iridium-192	U	ND	+/-0.076	0.133	0.100	pCi/g						
Iron-59	U	ND	+/-0.174	0.266	0.300	pCi/g						
Lead-210		3.76	+/-1.39	1.46	4.00	pCi/g						
Lead-212		22.1	+/-2.80	0.184	0.100	pCi/g						
Lead-214		6.22	+/-0.832	0.213	0.100	pCi/g						
Manganese-54	U	ND	+/-0.267	0.108	0.100	pCi/g						
Mercury-203	U	ND	+/-0.194	0.196	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.18	5.70	1000	pCi/g						
Neptunium-239	U	ND	+/-0.481	0.595	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0665	0.114	1.00	pCi/g						
Niobium-95	U	ND	+/-0.136	0.242	0.050	pCi/g						
Potassium-40		1.65	+/-1.06	0.974	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0709	0.119	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0811	0.149	1.00	pCi/g						
Radium-228		20.3	+/-2.67	0.350	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.617	1.07	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-11
Sample ID: 50722013

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0714	0.126	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0558	0.0949	0.080	pCi/g					
Thallium-208		6.96	+/-0.889	0.120	0.080	pCi/g					
Thorium-230		5.78	+/-0.825	0.208	1.00	pCi/g					
Thorium-234		7.56	+/-2.81	2.00	2.00	pCi/g					
Tin-113	U	ND	+/-0.0897	0.160	0.100	pCi/g					
Uranium-235	U	ND	+/-0.382	0.702	0.500	pCi/g					
Uranium-238		7.56	+/-2.81	2.00	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0729	0.123	0.100	pCi/g					
Zinc-65	U	ND	+/-0.228	0.217	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.311	0.330	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-10
Sample ID: 50722014
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.89	+/-0.674	0.143	0.800	pCi/g		CRB	11/05/01	1727	118028	1
Americium-241	U	ND	+/-0.095	0.183	0.200	pCi/g						
Antimony-124	U	ND	+/-0.034	0.0544	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0723	0.116	0.200	pCi/g						
Barium-133	U	ND	+/-0.0339	0.052	0.100	pCi/g						
Barium-140	U	ND	+/-0.473	0.836	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.273	0.473	0.700	pCi/g						
Bismuth-212		2.31	+/-0.528	0.352	0.500	pCi/g						
Bismuth-214		1.96	+/-0.278	0.0766	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0269	0.0477	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0973	0.133	0.100	pCi/g						
Cerium-144	U	ND	+/-0.178	0.325	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0253	0.0404	0.100	pCi/g						
Cesium-136	U	ND	+/-0.161	0.274	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0253	0.0458	0.100	pCi/g						
Chromium-51	U	ND	+/-0.419	0.751	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0269	0.0493	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0211	0.0386	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0409	0.0483	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0254	0.0486	0.100	pCi/g						
Europium-152	U	ND	+/-0.0698	0.127	0.200	pCi/g						
Europium-154	U	ND	+/-0.0703	0.102	0.500	pCi/g						
Europium-155	U	ND	+/-0.152	0.154	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0293	0.0538	0.100	pCi/g						
Iron-59	U	ND	+/-0.072	0.122	0.300	pCi/g						
Lead-210	U	ND	+/-2.29	3.45	4.00	pCi/g						
Lead-212		4.38	+/-0.487	0.0806	0.100	pCi/g						
Lead-214		2.42	+/-0.302	0.0882	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0693	0.0391	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0816	0.0646	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.16	1.98	1000	pCi/g						
Neptunium-239	U	ND	+/-0.152	0.276	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0363	0.0459	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0715	0.0998	0.050	pCi/g						
Potassium-40		0.736	+/-0.379	0.351	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0243	0.0437	0.080	pCi/g						
Promethium-146	U	ND	+/-0.030	0.0542	1.00	pCi/g						
Radium-228		3.89	+/-0.674	0.143	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.206	0.374	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-10
Sample ID: 50722014

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0242	0.0433	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0269	0.0369	0.080	pCi/g					
Thallium-208		1.21	+/-0.166	0.0437	0.080	pCi/g					
Thorium-230		1.96	+/-0.278	0.0766	1.00	pCi/g					
Thorium-234		2.75	+/-1.80	1.55	2.00	pCi/g					
Tin-113	U	ND	+/-0.0352	0.0645	0.100	pCi/g					
Uranium-235		0.425	+/-0.257	0.324	0.500	pCi/g					
Uranium-238		2.75	+/-1.80	1.55	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0266	0.0521	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0583	0.0972	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0675	0.107	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-9	Project:	RNSC00199
Sample ID:	50722015	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.503	+/-0.200	0.128	0.800	pCi/g		CRB	11/05/01	1834	118028	1
Americium-241	U	ND	+/-0.086	0.151	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0207	0.0393	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0491	0.0938	0.200	pCi/g						
Barium-133	U	ND	+/-0.0256	0.0436	0.100	pCi/g						
Barium-140	U	ND	+/-0.0893	0.173	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.156	0.326	0.700	pCi/g						
Bismuth-212		0.373	+/-0.189	0.251	0.500	pCi/g						
Bismuth-214		0.489	+/-0.119	0.0779	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0157	0.0298	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0307	0.0579	0.100	pCi/g						
Cerium-144	U	ND	+/-0.116	0.208	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0234	0.0373	0.100	pCi/g						
Cesium-136	U	ND	+/-0.0336	0.0634	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0203	0.036	0.100	pCi/g						
Chromium-51	U	ND	+/-0.164	0.326	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0197	0.039	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0137	0.0263	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0174	0.0368	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.022	0.0441	0.100	pCi/g						
Europium-152	U	ND	+/-0.0552	0.112	0.200	pCi/g						
Europium-154	U	ND	+/-0.0523	0.0959	0.500	pCi/g						
Europium-155	U	ND	+/-0.0519	0.102	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0181	0.0346	0.100	pCi/g						
Iron-59	U	ND	+/-0.0428	0.0824	0.300	pCi/g						
Lead-210	U	ND	+/-2.23	4.31	4.00	pCi/g						
Lead-212		0.493	+/-0.0893	0.0537	0.100	pCi/g						
Lead-214		0.430	+/-0.115	0.0725	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0176	0.0369	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0213	0.039	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.360	0.316	1000	pCi/g						
Neptunium-239	U	ND	+/-0.103	0.197	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0184	0.0379	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0243	0.042	0.050	pCi/g						
Potassium-40	U	ND	+/-0.443	0.359	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0172	0.0344	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0238	0.0458	1.00	pCi/g						
Radium-228		0.503	+/-0.200	0.128	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.180	0.359	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-9
Sample ID: 50722015

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.019	0.0358	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0197	0.0341	0.080	pCi/g					
Thallium-208		0.140	+/-0.0503	0.0387	0.080	pCi/g					
Thorium-230		0.489	+/-0.119	0.0779	1.00	pCi/g					
Thorium-234	U	ND	+/-1.11	1.36	2.00	pCi/g					
Tin-113	U	ND	+/-0.0249	0.0471	0.100	pCi/g					
Uranium-235	U	ND	+/-0.123	0.226	0.500	pCi/g					
Uranium-238	U	ND	+/-1.11	1.36	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0196	0.0424	0.100	pCi/g					
Zinc-65	U	ND	+/-0.042	0.0611	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.034	0.0649	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1511	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-5	Project:	RNSC00199
Sample ID:	50722016	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		15.8	+/-2.52	0.285	0.800	pCi/g		CRB	11/05/01	1836	118028	1
Americium-241	U	ND	+/-0.289	0.466	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0684	0.123	0.100	pCi/g						
Antimony-125	U	ND	+/-0.217	0.259	0.200	pCi/g						
Barium-133	U	ND	+/-0.0744	0.114	0.100	pCi/g						
Barium-140	U	ND	+/-1.01	1.81	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.617	1.12	0.700	pCi/g						
Bismuth-212		10.0	+/-1.72	0.752	0.500	pCi/g						
Bismuth-214		6.55	+/-0.828	0.171	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0555	0.0998	0.050	pCi/g						
Cerium-141	U	ND	+/-0.167	0.288	0.100	pCi/g						
Cerium-144	U	ND	+/-0.513	0.686	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0549	0.0864	0.100	pCi/g						
Cesium-136	U	ND	+/-0.296	0.474	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0625	0.0925	0.100	pCi/g						
Chromium-51	U	ND	+/-1.56	1.66	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0593	0.104	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0442	0.0837	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0607	0.102	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0491	0.0833	0.100	pCi/g						
Europium-152	U	ND	+/-0.153	0.269	0.200	pCi/g						
Europium-154	U	ND	+/-0.128	0.226	0.500	pCi/g						
Europium-155	U	ND	+/-0.340	0.332	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0646	0.114	0.100	pCi/g						
Iron-59	U	ND	+/-0.146	0.210	0.300	pCi/g						
Lead-210	U	ND	+/-6.56	11.2	4.00	pCi/g						
Lead-212		17.5	+/-2.01	0.169	0.100	pCi/g						
Lead-214		7.58	+/-0.946	0.180	0.100	pCi/g						
Manganese-54	U	ND	+/-0.103	0.0882	0.100	pCi/g						
Mercury-203	U	ND	+/-0.105	0.150	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.58	4.71	1000	pCi/g						
Neptunium-239	U	ND	+/-0.474	0.579	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0515	0.0919	1.00	pCi/g						
Niobium-95	U	ND	+/-0.103	0.191	0.050	pCi/g						
Potassium-40	U	ND	+/-0.538	1.06	1.00	pCi/g						
Promethium-144	U	ND	+/-0.052	0.0935	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0731	0.128	1.00	pCi/g						
Radium-228		15.8	+/-2.52	0.285	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.492	0.902	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-5
Sample ID: 50722016

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0553	0.102	0.080	pCi/g					
Sodium-22	U	ND	+/-0.046	0.0816	0.080	pCi/g					
Thallium-208		5.11	+/-0.594	0.090	0.080	pCi/g					
Thorium-230		6.55	+/-0.828	0.171	1.00	pCi/g					
Thorium-234		5.12	+/-3.45	3.73	2.00	pCi/g					
Tin-113	U	ND	+/-0.0908	0.141	0.100	pCi/g					
Uranium-235	U	ND	+/-0.449	0.673	0.500	pCi/g					
Uranium-238		5.12	+/-3.45	3.73	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0633	0.114	0.100	pCi/g					
Zinc-65	U	ND	+/-0.111	0.164	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.228	0.257	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-6
Sample ID: 50722017
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.50	+/-0.615	0.167	0.800	pCi/g		CRB	11/05/01	1846	118028	1
Americium-241	U	ND	+/-0.142	0.253	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0435	0.066	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0736	0.136	0.200	pCi/g						
Barium-133	U	ND	+/-0.0388	0.0654	0.100	pCi/g						
Barium-140	U	ND	+/-0.562	1.01	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.319	0.561	0.700	pCi/g						
Bismuth-212		2.49	+/-0.676	0.400	0.500	pCi/g						
Bismuth-214		1.22	+/-0.204	0.0922	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0284	0.0517	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0819	0.150	0.100	pCi/g						
Cerium-144	U	ND	+/-0.188	0.349	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0316	0.0507	0.100	pCi/g						
Cesium-136	U	ND	+/-0.182	0.325	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0208	0.056	0.100	pCi/g						
Chromium-51	U	ND	+/-0.486	0.894	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0549	0.0505	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0228	0.0424	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0326	0.0624	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0279	0.0513	0.100	pCi/g						
Europium-152	U	ND	+/-0.0788	0.145	0.200	pCi/g						
Europium-154	U	ND	+/-0.0682	0.126	0.500	pCi/g						
Europium-155	U	ND	+/-0.141	0.176	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0337	0.0622	0.100	pCi/g						
Iron-59	U	ND	+/-0.0755	0.146	0.300	pCi/g						
Lead-210	U	ND	+/-3.33	6.46	4.00	pCi/g						
Lead-212		3.68	+/-0.434	0.0927	0.100	pCi/g						
Lead-214		1.40	+/-0.236	0.0967	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0371	0.0651	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0523	0.0882	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.51	2.86	1000	pCi/g						
Neptunium-239	U	ND	+/-0.163	0.291	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0287	0.0536	1.00	pCi/g						
Niobium-95	U	ND	+/-0.069	0.111	0.050	pCi/g						
Potassium-40		0.860	+/-0.382	0.414	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0297	0.049	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0358	0.0675	1.00	pCi/g						
Radium-228		3.50	+/-0.615	0.167	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.274	0.497	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-6
Sample ID: 50722017

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0287	0.0542	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0247	0.0454	0.080	pCi/g					
Thallium-208		1.06	+/-0.159	0.0558	0.080	pCi/g					
Thorium-230		1.22	+/-0.204	0.0921	1.00	pCi/g					
Thorium-234		2.15	+/-1.84	2.01	2.00	pCi/g					
Tin-113	U	ND	+/-0.0416	0.0769	0.100	pCi/g					
Uranium-235	U	ND	+/-0.187	0.341	0.500	pCi/g					
Uranium-238		2.15	+/-1.84	2.01	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0314	0.0575	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0679	0.110	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.103	0.125	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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B Analyte found in the sample as well as the associated blank.
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Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-7	Project:	RNSC00199
Sample ID:	50722018	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.392	+/-0.136	0.122	0.800	pCi/g		CRB	11/05/01	1848	118028	1
Americium-241	U	ND	+/-0.0826	0.135	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0265	0.0471	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0447	0.0883	0.200	pCi/g						
Barium-133	U	ND	+/-0.0227	0.0388	0.100	pCi/g						
Barium-140	U	ND	+/-0.349	0.642	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.241	0.379	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.252	0.255	0.500	pCi/g						
Bismuth-214		0.352	+/-0.0927	0.065	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0166	0.0305	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0456	0.0864	0.100	pCi/g						
Cerium-144	U	ND	+/-0.108	0.201	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0213	0.0341	0.100	pCi/g						
Cesium-136	U	ND	+/-0.145	0.252	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0207	0.0335	0.100	pCi/g						
Chromium-51	U	ND	+/-0.304	0.550	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.025	0.0459	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0135	0.0262	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0204	0.0383	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0168	0.0377	0.100	pCi/g						
Europium-152	U	ND	+/-0.0477	0.0958	0.200	pCi/g						
Europium-154	U	ND	+/-0.0562	0.112	0.500	pCi/g						
Europium-155	U	ND	+/-0.0724	0.106	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0218	0.0426	0.100	pCi/g						
Iron-59	U	ND	+/-0.0607	0.102	0.300	pCi/g						
Lead-210	U	ND	+/-1.83	3.61	4.00	pCi/g						
Lead-212		0.500	+/-0.0859	0.0509	0.100	pCi/g						
Lead-214		0.401	+/-0.104	0.056	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0166	0.0292	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0267	0.0498	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.04	1.50	1000	pCi/g						
Neptunium-239	U	ND	+/-0.095	0.177	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0177	0.0348	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0336	0.0667	0.050	pCi/g						
Potassium-40	U	ND	+/-0.259	0.545	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0178	0.0358	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0202	0.0407	1.00	pCi/g						
Radium-228		0.392	+/-0.136	0.122	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.152	0.299	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-7
Sample ID: 50722018

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.019	0.0375	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0203	0.0404	0.080	pCi/g					
Thallium-208		0.146	+/-0.0496	0.0346	0.080	pCi/g					
Thorium-230		0.352	+/-0.0927	0.065	1.00	pCi/g					
Thorium-234	U	ND	+/-1.02	1.24	2.00	pCi/g					
Tin-113	U	ND	+/-0.0226	0.042	0.100	pCi/g					
Uranium-235	U	ND	+/-0.103	0.203	0.500	pCi/g					
Uranium-238	U	ND	+/-1.02	1.24	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0197	0.0425	0.100	pCi/g					
Zinc-65	U	ND	+/-0.042	0.0645	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0419	0.0821	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-8	Project:	RNSC00199
Sample ID:	50722019	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.10	+/-0.444	0.165	0.800	pCi/g		CRB	11/05/01	1850	118028	1
Americium-241	U	ND	+/-0.180	0.251	0.200	pCi/g						
Antimony-124	U	ND	+/-0.036	0.0671	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0703	0.125	0.200	pCi/g						
Barium-133	U	ND	+/-0.0417	0.0614	0.100	pCi/g						
Barium-140	U	ND	+/-0.524	0.908	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.297	0.528	0.700	pCi/g						
Bismuth-212		1.23	+/-0.388	0.373	0.500	pCi/g						
Bismuth-214		1.57	+/-0.248	0.0935	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0268	0.0505	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0766	0.141	0.100	pCi/g						
Cerium-144	U	ND	+/-0.172	0.327	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0286	0.0472	0.100	pCi/g						
Cesium-136	U	ND	+/-0.185	0.326	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0307	0.0523	0.100	pCi/g						
Chromium-51	U	ND	+/-0.484	0.867	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0304	0.059	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0222	0.043	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0342	0.0644	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0333	0.0581	0.100	pCi/g						
Europium-152	U	ND	+/-0.0863	0.143	0.200	pCi/g						
Europium-154	U	ND	+/-0.0643	0.116	0.500	pCi/g						
Europium-155	U	ND	+/-0.132	0.161	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0331	0.0606	0.100	pCi/g						
Iron-59	U	ND	+/-0.0738	0.140	0.300	pCi/g						
Lead-210	U	ND	+/-3.89	6.60	4.00	pCi/g						
Lead-212		2.38	+/-0.292	0.101	0.100	pCi/g						
Lead-214		1.63	+/-0.244	0.0988	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0313	0.0612	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0919	0.0693	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.28	2.34	1000	pCi/g						
Neptunium-239	U	ND	+/-0.151	0.274	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0364	0.0517	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0623	0.0994	0.050	pCi/g						
Potassium-40	U	ND	+/-0.535	0.472	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0269	0.0475	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0355	0.0695	1.00	pCi/g						
Radium-228		2.10	+/-0.444	0.165	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.228	0.402	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-8
Sample ID: 50722019

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0248	0.0459	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0233	0.0418	0.080	pCi/g					
Thallium-208		0.737	+/-0.122	0.0473	0.080	pCi/g					
Thorium-230		1.57	+/-0.248	0.0935	1.00	pCi/g					
Thorium-234	U	ND	+/-3.18	2.00	2.00	pCi/g					
Tin-113	U	ND	+/-0.0424	0.0713	0.100	pCi/g					
Uranium-235	U	ND	+/-0.177	0.338	0.500	pCi/g					
Uranium-238	U	ND	+/-3.18	2.00	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.036	0.066	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0646	0.0921	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.114	0.137	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-4
Sample ID: 50722020
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.64	+/-0.332	0.152	0.800	pCi/g		CRB	11/05/01	1852	118028	1
Americium-241	U	ND	+/-0.113	0.195	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0309	0.0607	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0584	0.114	0.200	pCi/g						
Barium-133	U	ND	+/-0.0552	0.0525	0.100	pCi/g						
Barium-140	U	ND	+/-0.411	0.863	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.286	0.543	0.700	pCi/g						
Bismuth-212		1.31	+/-0.472	0.337	0.500	pCi/g						
Bismuth-214		0.865	+/-0.148	0.0849	0.200	pCi/g						
Cerium-139	U	ND	+/-0.023	0.0411	0.050	pCi/g						
Cerium-141	U	ND	+/-0.108	0.117	0.100	pCi/g						
Cerium-144	U	ND	+/-0.142	0.270	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0248	0.0421	0.100	pCi/g						
Cesium-136	U	ND	+/-0.153	0.311	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0265	0.0426	0.100	pCi/g						
Chromium-51	U	ND	+/-0.420	0.789	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0326	0.0548	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0185	0.0349	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0298	0.0516	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0264	0.0325	0.100	pCi/g						
Europium-152	U	ND	+/-0.066	0.119	0.200	pCi/g						
Europium-154	U	ND	+/-0.0684	0.141	0.500	pCi/g						
Europium-155	U	ND	+/-0.113	0.129	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0284	0.0498	0.100	pCi/g						
Iron-59	U	ND	+/-0.0595	0.114	0.300	pCi/g						
Lead-210	U	ND	+/-2.87	4.96	4.00	pCi/g						
Lead-212		1.85	+/-0.226	0.0697	0.100	pCi/g						
Lead-214		1.02	+/-0.164	0.0816	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0315	0.0459	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0771	0.0597	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.15	2.14	1000	pCi/g						
Neptunium-239	U	ND	+/-0.130	0.253	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0226	0.0421	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0425	0.0827	0.050	pCi/g						
Potassium-40	U	ND	+/-0.523	0.429	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0249	0.0463	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0428	0.0565	1.00	pCi/g						
Radium-228		1.64	+/-0.332	0.152	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.221	0.378	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 8, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-4 Project: RNSC00199
Sample ID: 50722020 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.026	0.0441	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0247	0.0511	0.080	pCi/g					
Thallium-208		0.568	+/-0.0919	0.054	0.080	pCi/g					
Thorium-230		0.865	+/-0.148	0.0849	1.00	pCi/g					
Thorium-234		2.93	+/-1.89	1.64	2.00	pCi/g					
Tin-113	U	ND	+/-0.0346	0.0605	0.100	pCi/g					
Uranium-235	U	ND	+/-0.292	0.279	0.500	pCi/g					
Uranium-238		2.93	+/-1.89	1.64	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0254	0.049	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0535	0.0828	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0555	0.106	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-3
Sample ID: 50722021
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.153	0.217	0.800	pCi/g		CRB	11/08/01	1805	118047	1
Americium-241	U	ND	+/-0.0695	0.141	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0246	0.0502	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0414	0.0774	0.200	pCi/g						
Barium-133	U	ND	+/-0.0225	0.0385	0.100	pCi/g						
Barium-140	U	ND	+/-0.391	0.565	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.200	0.406	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.240	0.267	0.500	pCi/g						
Bismuth-214		0.302	+/-0.0888	0.0654	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0158	0.0287	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0638	0.0875	0.100	pCi/g						
Cerium-144	U	ND	+/-0.108	0.208	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0208	0.035	0.100	pCi/g						
Cesium-136	U	ND	+/-0.120	0.222	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0261	0.0363	0.100	pCi/g						
Chromium-51	U	ND	+/-0.324	0.531	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0191	0.0355	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0122	0.0241	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0208	0.0363	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0202	0.0447	0.100	pCi/g						
Europium-152	U	ND	+/-0.0521	0.0975	0.200	pCi/g						
Europium-154	U	ND	+/-0.0516	0.0954	0.500	pCi/g						
Europium-155	U	ND	+/-0.0501	0.104	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0204	0.0388	0.100	pCi/g						
Iron-59	U	ND	+/-0.0515	0.100	0.300	pCi/g						
Lead-210	U	ND	+/-2.73	3.31	4.00	pCi/g						
Lead-212		0.385	+/-0.0755	0.0575	0.100	pCi/g						
Lead-214		0.422	+/-0.0995	0.0614	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0438	0.0328	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0423	0.0452	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.10	2.19	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0895	0.174	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0167	0.0336	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0348	0.0651	0.050	pCi/g						
Potassium-40	U	ND	+/-0.380	0.299	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0195	0.0414	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0214	0.0416	1.00	pCi/g						
Radium-228	U	ND	+/-0.153	0.0987	0.500	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-3
Sample ID: 50722021

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Ruthenium-106	U	ND	+/-0.159	0.287	0.800	pCi/g					
Silver-110m	U	ND	+/-0.0171	0.031	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0187	0.0346	0.080	pCi/g					
Thallium-208		0.131	+/-0.0399	0.0309	0.080	pCi/g					
Thorium-230		0.302	+/-0.0888	0.0654	1.00	pCi/g					
Thorium-234	U	ND	+/-0.589	1.19	2.00	pCi/g					
Tin-113	U	ND	+/-0.023	0.0433	0.100	pCi/g					
Uranium-235	U	ND	+/-0.136	0.189	0.500	pCi/g					
Uranium-238	U	ND	+/-0.589	1.19	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0232	0.041	0.100	pCi/g					
Zinc-65	U	ND	+/-0.047	0.0652	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0446	0.0781	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-3
Sample ID: 50722021

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-2	Project:	RNSC00199
Sample ID:	50722022	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.154	0.254	0.800	pCi/g		CRB	11/08/01	1805	118047	1
Americium-241	U	ND	+/-0.0647	0.126	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0248	0.0416	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0493	0.0998	0.200	pCi/g						
Barium-133	U	ND	+/-0.0229	0.0398	0.100	pCi/g						
Barium-140	U	ND	+/-0.345	0.657	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.217	0.401	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.164	0.329	0.500	pCi/g						
Bismuth-214		0.298	+/-0.093	0.0665	0.200	pCi/g						
Cerium-139	U	ND	+/-0.016	0.0311	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0489	0.0932	0.100	pCi/g						
Cerium-144	U	ND	+/-0.111	0.189	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0172	0.0312	0.100	pCi/g						
Cesium-136	U	ND	+/-0.146	0.253	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0186	0.030	0.100	pCi/g						
Chromium-51	U	ND	+/-0.306	0.565	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0309	0.048	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0123	0.0231	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0227	0.0368	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.021	0.0457	0.100	pCi/g						
Europium-152	U	ND	+/-0.0466	0.0891	0.200	pCi/g						
Europium-154	U	ND	+/-0.055	0.109	0.500	pCi/g						
Europium-155	U	ND	+/-0.0461	0.0932	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0207	0.0385	0.100	pCi/g						
Iron-59	U	ND	+/-0.0484	0.0982	0.300	pCi/g						
Lead-210		3.67	+/-2.86	2.91	4.00	pCi/g						
Lead-212		0.286	+/-0.0804	0.0688	0.100	pCi/g						
Lead-214		0.248	+/-0.0931	0.068	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0193	0.0309	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0352	0.0571	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.00	1.98	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0916	0.172	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0168	0.0326	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0343	0.059	0.050	pCi/g						
Potassium-40	U	ND	+/-0.303	0.328	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0215	0.0378	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0203	0.042	1.00	pCi/g						
Radium-228		0.368	+/-0.154	0.254	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.170	0.307	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-2
Sample ID: 50722022

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0221	0.0363	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0199	0.0394	0.080	pCi/g					
Thallium-208		0.122	+/-0.0438	0.0337	0.080	pCi/g					
Thorium-230		0.298	+/-0.093	0.0665	1.00	pCi/g					
Thorium-234	U	ND	+/-1.21	1.05	2.00	pCi/g					
Tin-113	U	ND	+/-0.0268	0.0547	0.100	pCi/g					
Uranium-235	U	ND	+/-0.104	0.206	0.500	pCi/g					
Uranium-238	U	ND	+/-1.21	1.05	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0212	0.0458	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0457	0.0722	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0403	0.0794	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-2
Sample ID: 50722022

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-1	Project:	RNSC00199
Sample ID:	50722023	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.31	+/-0.416	0.223	0.800	pCi/g		CRB	11/08/01	1806	118047	1
Americium-241	U	ND	+/-0.315	0.391	0.200	pCi/g						
Antimony-124	U	ND	+/-0.053	0.0855	0.100	pCi/g						
Antimony-125	U	ND	+/-0.102	0.187	0.200	pCi/g						
Barium-133	U	ND	+/-0.0883	0.107	0.100	pCi/g						
Barium-140	U	ND	+/-0.795	1.48	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.445	0.784	0.700	pCi/g						
Bismuth-212		1.92	+/-0.753	0.519	0.500	pCi/g						
Bismuth-214		2.42	+/-0.230	0.125	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0383	0.069	0.050	pCi/g						
Cerium-141	U	ND	+/-0.115	0.215	0.100	pCi/g						
Cerium-144	U	ND	+/-0.262	0.481	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0385	0.0618	0.100	pCi/g						
Cesium-136	U	ND	+/-0.254	0.467	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0433	0.0659	0.100	pCi/g						
Chromium-51	U	ND	+/-0.729	1.33	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0418	0.0777	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0306	0.0578	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.081	0.0653	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0348	0.0667	0.100	pCi/g						
Europium-152	U	ND	+/-0.127	0.195	0.200	pCi/g						
Europium-154	U	ND	+/-0.103	0.188	0.500	pCi/g						
Europium-155	U	ND	+/-0.125	0.247	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0472	0.0845	0.100	pCi/g						
Iron-59	U	ND	+/-0.0963	0.171	0.300	pCi/g						
Lead-210	U	ND	+/-7.58	12.4	4.00	pCi/g						
Lead-212	U	ND	+/-0.304	0.118	0.100	pCi/g						
Lead-214		2.84	+/-0.252	0.146	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0417	0.0769	0.100	pCi/g						
Mercury-203	U	ND	+/-0.105	0.107	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.12	3.78	1000	pCi/g						
Neptunium-239	U	ND	+/-0.218	0.406	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0338	0.0659	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0883	0.146	0.050	pCi/g						
Potassium-40	U	ND	+/-0.443	0.724	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0352	0.0587	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0491	0.0896	1.00	pCi/g						
Radium-228		3.31	+/-0.416	0.223	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.319	0.578	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-1
Sample ID: 50722023

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0369	0.0689	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0364	0.068	0.080	pCi/g					
Thallium-208		1.22	+/-0.121	0.067	0.080	pCi/g					
Thorium-230		2.42	+/-0.230	0.125	1.00	pCi/g					
Thorium-234	U	ND	+/-2.80	3.27	2.00	pCi/g					
Tin-113	U	ND	+/-0.0588	0.106	0.100	pCi/g					
Uranium-235	U	ND	+/-0.244	0.467	0.500	pCi/g					
Uranium-238	U	ND	+/-2.80	3.27	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0441	0.0931	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0703	0.123	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0939	0.170	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
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B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-1
Sample ID: 50722023

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-2	Project:	RNSC00199
Sample ID:	50722024	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		5.21	+/-0.898	0.230	0.800	pCi/g		CRB	11/08/01	1806	118047	1
Americium-241	U	ND	+/-0.279	0.459	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0497	0.0884	0.100	pCi/g						
Antimony-125	U	ND	+/-0.137	0.182	0.200	pCi/g						
Barium-133	U	ND	+/-0.0494	0.0798	0.100	pCi/g						
Barium-140	U	ND	+/-0.811	1.47	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.447	0.776	0.700	pCi/g						
Bismuth-212		3.68	+/-0.816	0.503	0.500	pCi/g						
Bismuth-214		3.44	+/-0.440	0.117	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0406	0.073	0.050	pCi/g						
Cerium-141	U	ND	+/-0.117	0.211	0.100	pCi/g						
Cerium-144	U	ND	+/-0.261	0.466	0.500	pCi/g						
Cesium-134	U	ND	+/-0.039	0.0585	0.100	pCi/g						
Cesium-136	U	ND	+/-0.256	0.417	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0443	0.0668	0.100	pCi/g						
Chromium-51	U	ND	+/-0.660	1.23	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0391	0.0715	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.032	0.0587	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0421	0.0735	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0421	0.068	0.100	pCi/g						
Europium-152	U	ND	+/-0.103	0.175	0.200	pCi/g						
Europium-154	U	ND	+/-0.101	0.183	0.500	pCi/g						
Europium-155	U	ND	+/-0.203	0.237	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0444	0.0826	0.100	pCi/g						
Iron-59	U	ND	+/-0.100	0.172	0.300	pCi/g						
Lead-210	U	ND	+/-9.35	16.1	4.00	pCi/g						
Lead-212		5.61	+/-0.649	0.129	0.100	pCi/g						
Lead-214		4.15	+/-0.514	0.129	0.100	pCi/g						
Manganese-54	U	ND	+/-0.051	0.0706	0.100	pCi/g						
Mercury-203	U	ND	+/-0.112	0.113	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.16	3.97	1000	pCi/g						
Neptunium-239	U	ND	+/-0.332	0.410	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0521	0.063	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0929	0.154	0.050	pCi/g						
Potassium-40	U	ND	+/-0.534	0.521	1.00	pCi/g						
Promethium-144	U	ND	+/-0.037	0.0647	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0747	0.0839	1.00	pCi/g						
Radium-228		5.21	+/-0.898	0.230	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.327	0.561	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-2 Project: RNSC00199
Sample ID: 50722024 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0371	0.0658	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0367	0.0665	0.080	pCi/g					
Thallium-208		1.77	+/-0.223	0.0632	0.080	pCi/g					
Thorium-230		3.44	+/-0.440	0.117	1.00	pCi/g					
Thorium-234		4.98	+/-3.54	3.56	2.00	pCi/g					
Tin-113	U	ND	+/-0.0613	0.0914	0.100	pCi/g					
Uranium-235	U	ND	+/-0.255	0.454	0.500	pCi/g					
Uranium-238		4.98	+/-3.54	3.56	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0438	0.0861	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0901	0.130	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.093	0.162	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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UI Uncertain identification for gamma spectroscopy.
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Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-2
Sample ID: 50722024

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-1	Project:	RNSC00199
Sample ID:	50722025	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.36	+/-0.470	0.196	0.800	pCi/g		CRB	11/08/01	1807	118047	1
Americium-241	U	ND	+/-0.219	0.384	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0438	0.0758	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0818	0.159	0.200	pCi/g						
Barium-133	U	ND	+/-0.0433	0.0721	0.100	pCi/g						
Barium-140	U	ND	+/-0.802	1.30	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.377	0.711	0.700	pCi/g						
Bismuth-212		1.81	+/-0.587	0.440	0.500	pCi/g						
Bismuth-214		1.92	+/-0.296	0.119	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0321	0.0599	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0914	0.175	0.100	pCi/g						
Cerium-144	U	ND	+/-0.200	0.365	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0331	0.0562	0.100	pCi/g						
Cesium-136	U	ND	+/-0.233	0.410	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0483	0.0553	0.100	pCi/g						
Chromium-51	U	ND	+/-0.574	1.07	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0373	0.0753	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0495	0.0453	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0383	0.0666	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0328	0.0597	0.100	pCi/g						
Europium-152	U	ND	+/-0.0887	0.160	0.200	pCi/g						
Europium-154	U	ND	+/-0.0892	0.173	0.500	pCi/g						
Europium-155	U	ND	+/-0.192	0.194	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0392	0.0679	0.100	pCi/g						
Iron-59	U	ND	+/-0.082	0.152	0.300	pCi/g						
Lead-210	U	ND	+/-8.21	15.2	4.00	pCi/g						
Lead-212		3.27	+/-0.409	0.107	0.100	pCi/g						
Lead-214		2.39	+/-0.338	0.116	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0359	0.0656	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0569	0.0926	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.98	3.27	1000	pCi/g						
Neptunium-239	U	ND	+/-0.178	0.323	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0298	0.056	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0995	0.136	0.050	pCi/g						
Potassium-40	U	ND	+/-0.651	0.599	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0324	0.0586	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0353	0.0681	1.00	pCi/g						
Radium-228		2.36	+/-0.470	0.196	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.289	0.528	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-1 Project: RNSC00199
Sample ID: 50722025 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0332	0.059	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0323	0.0625	0.080	pCi/g					
Thallium-208		0.955	+/-0.136	0.0561	0.080	pCi/g					
Thorium-230		1.92	+/-0.296	0.119	1.00	pCi/g					
Thorium-234	U	ND	+/-2.60	3.08	2.00	pCi/g					
Tin-113	U	ND	+/-0.0516	0.0786	0.100	pCi/g					
Uranium-235	U	ND	+/-0.197	0.367	0.500	pCi/g					
Uranium-238	U	ND	+/-2.60	3.08	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0345	0.0706	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0751	0.124	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0784	0.148	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-1 Project: RNSC00199
Sample ID: 50722025 Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPE-24	Project:	RNSC00199
Sample ID:	50722026	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		4.30	+/-0.722	0.202	0.800	pCi/g		CRB	11/08/01	1807	118047	1
Americium-241	U	ND	+/-0.0507	0.0897	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0479	0.0798	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0845	0.150	0.200	pCi/g						
Barium-133	U	ND	+/-0.0426	0.0705	0.100	pCi/g						
Barium-140	U	ND	+/-0.762	1.41	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.396	0.753	0.700	pCi/g						
Bismuth-212		3.02	+/-0.723	0.496	0.500	pCi/g						
Bismuth-214		2.79	+/-0.386	0.106	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0415	0.0534	0.050	pCi/g						
Cerium-141	U	ND	+/-0.165	0.145	0.100	pCi/g						
Cerium-144	U	ND	+/-0.185	0.344	0.500	pCi/g						
Cesium-134	U	ND	+/-0.032	0.054	0.100	pCi/g						
Cesium-136	U	ND	+/-0.258	0.445	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0384	0.0601	0.100	pCi/g						
Chromium-51	U	ND	+/-0.589	1.06	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0409	0.0709	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0236	0.0405	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0417	0.0725	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0376	0.0667	0.100	pCi/g						
Europium-152	U	ND	+/-0.0864	0.152	0.200	pCi/g						
Europium-154	U	ND	+/-0.0914	0.160	0.500	pCi/g						
Europium-155	U	ND	+/-0.119	0.143	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0396	0.0687	0.100	pCi/g						
Iron-59	U	ND	+/-0.0973	0.160	0.300	pCi/g						
Lead-210		2.39	+/-0.858	0.694	4.00	pCi/g						
Lead-212		4.85	+/-0.732	0.0927	0.100	pCi/g						
Lead-214		3.38	+/-0.477	0.108	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0441	0.0691	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0925	0.0998	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.84	3.63	1000	pCi/g						
Neptunium-239	U	ND	+/-0.259	0.295	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0341	0.0628	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0815	0.127	0.050	pCi/g						
Potassium-40		2.36	+/-0.760	0.544	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0336	0.060	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0412	0.0748	1.00	pCi/g						
Radium-228		4.30	+/-0.722	0.202	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.309	0.567	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPE-24
Sample ID: 50722026

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0333	0.0614	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0331	0.0579	0.080	pCi/g					
Thallium-208		1.44	+/-0.203	0.0631	0.080	pCi/g					
Thorium-230		2.79	+/-0.386	0.106	1.00	pCi/g					
Thorium-234		2.78	+/-1.20	0.937	2.00	pCi/g					
Tin-113	U	ND	+/-0.0496	0.0822	0.100	pCi/g					
Uranium-235		0.527	+/-0.406	0.361	0.500	pCi/g					
Uranium-238		2.78	+/-1.20	0.937	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.040	0.0807	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0873	0.129	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.130	0.172	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPE-24
Sample ID: 50722026

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-23	Project:	RNSC00199
Sample ID:	50722027	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		17.5	+/-2.66	0.319	0.800	pCi/g		CRB	11/08/01	2009	118047	1
Americium-241	U	ND	+/-0.299	0.534	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0786	0.143	0.100	pCi/g						
Antimony-125	U	ND	+/-0.168	0.292	0.200	pCi/g						
Barium-133	U	ND	+/-0.0864	0.136	0.100	pCi/g						
Barium-140	U	ND	+/-1.39	2.44	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.772	1.29	0.700	pCi/g						
Bismuth-212		11.2	+/-1.76	0.876	0.500	pCi/g						
Bismuth-214		8.70	+/-1.09	0.198	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0638	0.118	0.050	pCi/g						
Cerium-141	U	ND	+/-0.189	0.354	0.100	pCi/g						
Cerium-144	U	ND	+/-0.416	0.765	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0832	0.0969	0.100	pCi/g						
Cesium-136	U	ND	+/-0.429	0.720	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0706	0.106	0.100	pCi/g						
Chromium-51	U	ND	+/-1.78	1.92	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0684	0.123	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0493	0.0918	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0718	0.128	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0524	0.0927	0.100	pCi/g						
Europium-152	U	ND	+/-0.176	0.306	0.200	pCi/g						
Europium-154	U	ND	+/-0.158	0.254	0.500	pCi/g						
Europium-155	U	ND	+/-0.409	0.372	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0766	0.134	0.100	pCi/g						
Iron-59	U	ND	+/-0.166	0.272	0.300	pCi/g						
Lead-210	U	ND	+/-11.4	13.4	4.00	pCi/g						
Lead-212		19.8	+/-2.23	0.199	0.100	pCi/g						
Lead-214		9.88	+/-1.19	0.217	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0908	0.103	0.100	pCi/g						
Mercury-203	U	ND	+/-0.203	0.194	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.93	6.30	1000	pCi/g						
Neptunium-239	U	ND	+/-0.528	0.660	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0589	0.106	1.00	pCi/g						
Niobium-95	U	ND	+/-0.124	0.228	0.050	pCi/g						
Potassium-40		2.16	+/-0.846	0.719	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0613	0.109	0.080	pCi/g						
Promethium-146	U	ND	+/-0.103	0.143	1.00	pCi/g						
Radium-228		17.5	+/-2.66	0.319	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.543	0.998	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-23
Sample ID: 50722027

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0609	0.110	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0571	0.0921	0.080	pCi/g					
Thallium-208		6.09	+/-0.715	0.107	0.080	pCi/g					
Thorium-230		8.70	+/-1.09	0.198	1.00	pCi/g					
Thorium-234		8.88	+/-4.79	4.30	2.00	pCi/g					
Tin-113	U	ND	+/-0.101	0.156	0.100	pCi/g					
Uranium-235	U	ND	+/-0.408	0.760	0.500	pCi/g					
Uranium-238		8.88	+/-4.79	4.30	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0762	0.126	0.100	pCi/g					
Zinc-65	U	ND	+/-0.172	0.189	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.274	0.296	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-23
Sample ID: 50722027

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-22	Project:	RNSC00199
Sample ID:	50722028	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.90	+/-0.364	0.139	0.800	pCi/g		CRB	11/08/01	2010	118047	1
Americium-241	U	ND	+/-0.185	0.200	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0352	0.0647	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0652	0.124	0.200	pCi/g						
Barium-133	U	ND	+/-0.0492	0.0539	0.100	pCi/g						
Barium-140	U	ND	+/-0.541	1.02	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.279	0.520	0.700	pCi/g						
Bismuth-212		1.03	+/-0.437	0.350	0.500	pCi/g						
Bismuth-214		0.900	+/-0.156	0.0822	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0241	0.0418	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0697	0.128	0.100	pCi/g						
Cerium-144	U	ND	+/-0.160	0.298	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0267	0.0444	0.100	pCi/g						
Cesium-136	U	ND	+/-0.184	0.342	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0295	0.0529	0.100	pCi/g						
Chromium-51	U	ND	+/-0.502	0.785	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0296	0.0565	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0184	0.0352	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0274	0.0508	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0264	0.0433	0.100	pCi/g						
Europium-152	U	ND	+/-0.0657	0.122	0.200	pCi/g						
Europium-154	U	ND	+/-0.0596	0.0958	0.500	pCi/g						
Europium-155	U	ND	+/-0.130	0.140	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0294	0.0572	0.100	pCi/g						
Iron-59	U	ND	+/-0.0694	0.130	0.300	pCi/g						
Lead-210	U	ND	+/-3.01	5.48	4.00	pCi/g						
Lead-212		1.96	+/-0.243	0.0697	0.100	pCi/g						
Lead-214		1.08	+/-0.174	0.0858	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0275	0.0534	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0423	0.0699	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.40	2.60	1000	pCi/g						
Neptunium-239	U	ND	+/-0.129	0.246	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0249	0.0463	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0802	0.115	0.050	pCi/g						
Potassium-40	U	ND	+/-0.373	0.484	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0271	0.0479	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0302	0.0575	1.00	pCi/g						
Radium-228		1.90	+/-0.364	0.139	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.242	0.421	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-22
Sample ID: 50722028

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0273	0.0423	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0216	0.0346	0.080	pCi/g					
Thallium-208		0.539	+/-0.0999	0.0435	0.080	pCi/g					
Thorium-230		0.900	+/-0.156	0.0822	1.00	pCi/g					
Thorium-234		1.78	+/-2.21	1.64	2.00	pCi/g					
Tin-113	U	ND	+/-0.036	0.0665	0.100	pCi/g					
Uranium-235	U	ND	+/-0.152	0.282	0.500	pCi/g					
Uranium-238		1.78	+/-2.21	1.64	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0296	0.0467	0.100	pCi/g					
Zinc-65	U	ND	+/-0.089	0.101	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0644	0.119	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-22
Sample ID: 50722028

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-21	Project:	RNSC00199
Sample ID:	50722029	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.04	+/-0.584	0.196	0.800	pCi/g		CRB	11/08/01	2010	118047	1
Americium-241	U	ND	+/-0.135	0.265	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0403	0.0777	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0829	0.153	0.200	pCi/g						
Barium-133	U	ND	+/-0.0409	0.0658	0.100	pCi/g						
Barium-140	U	ND	+/-0.795	1.36	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.358	0.603	0.700	pCi/g						
Bismuth-212		1.57	+/-0.597	0.479	0.500	pCi/g						
Bismuth-214		1.65	+/-0.240	0.0957	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0318	0.0545	0.050	pCi/g						
Cerium-141	U	ND	+/-0.095	0.174	0.100	pCi/g						
Cerium-144	U	ND	+/-0.206	0.381	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0322	0.049	0.100	pCi/g						
Cesium-136	U	ND	+/-0.224	0.448	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0319	0.0585	0.100	pCi/g						
Chromium-51	U	ND	+/-0.732	1.04	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0993	0.0627	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0249	0.0466	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.042	0.0732	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0272	0.055	0.100	pCi/g						
Europium-152	U	ND	+/-0.105	0.163	0.200	pCi/g						
Europium-154	U	ND	+/-0.070	0.142	0.500	pCi/g						
Europium-155	U	ND	+/-0.116	0.184	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0368	0.0698	0.100	pCi/g						
Iron-59	U	ND	+/-0.0943	0.163	0.300	pCi/g						
Lead-210	U	ND	+/-4.58	5.85	4.00	pCi/g						
Lead-212		3.20	+/-0.384	0.0889	0.100	pCi/g						
Lead-214		1.82	+/-0.264	0.113	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0364	0.0678	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0789	0.085	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.82	3.00	1000	pCi/g						
Neptunium-239	U	ND	+/-0.173	0.320	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0308	0.0579	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0643	0.116	0.050	pCi/g						
Potassium-40	U	ND	+/-0.506	0.457	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0307	0.056	0.080	pCi/g						
Promethium-146	U	ND	+/-0.039	0.0749	1.00	pCi/g						
Radium-228		3.04	+/-0.584	0.196	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.282	0.472	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-21
Sample ID: 50722029

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0301	0.0537	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0253	0.0513	0.080	pCi/g					
Thallium-208		1.04	+/-0.145	0.0589	0.080	pCi/g					
Thorium-230		1.65	+/-0.240	0.0957	1.00	pCi/g					
Thorium-234	U	ND	+/-2.06	2.09	2.00	pCi/g					
Tin-113	U	ND	+/-0.0451	0.0793	0.100	pCi/g					
Uranium-235	U	ND	+/-0.202	0.369	0.500	pCi/g					
Uranium-238	U	ND	+/-2.06	2.09	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0331	0.0611	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0784	0.117	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0825	0.155	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-21
Sample ID: 50722029

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-20	Project:	RNSC00199
Sample ID:	50722030	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		4.76	+/-0.789	0.219	0.800	pCi/g		CRB	11/08/01	2011	118047	1
Americium-241	U	ND	+/-0.204	0.350	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0515	0.0868	0.100	pCi/g						
Antimony-125	U	ND	+/-0.103	0.185	0.200	pCi/g						
Barium-133	U	ND	+/-0.0518	0.087	0.100	pCi/g						
Barium-140	U	ND	+/-0.950	1.71	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.461	0.805	0.700	pCi/g						
Bismuth-212		3.31	+/-0.851	0.564	0.500	pCi/g						
Bismuth-214		2.62	+/-0.368	0.129	0.200	pCi/g						
Cerium-139	U	ND	+/-0.041	0.074	0.050	pCi/g						
Cerium-141	U	ND	+/-0.146	0.212	0.100	pCi/g						
Cerium-144	U	ND	+/-0.262	0.458	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0396	0.0639	0.100	pCi/g						
Cesium-136	U	ND	+/-0.289	0.514	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0452	0.0705	0.100	pCi/g						
Chromium-51	U	ND	+/-0.722	1.36	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0442	0.0753	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0312	0.0562	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0489	0.0839	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0403	0.0691	0.100	pCi/g						
Europium-152	U	ND	+/-0.109	0.191	0.200	pCi/g						
Europium-154	U	ND	+/-0.106	0.172	0.500	pCi/g						
Europium-155	U	ND	+/-0.233	0.234	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0474	0.0852	0.100	pCi/g						
Iron-59	U	ND	+/-0.104	0.174	0.300	pCi/g						
Lead-210	U	ND	+/-4.94	8.73	4.00	pCi/g						
Lead-212		4.98	+/-0.598	0.122	0.100	pCi/g						
Lead-214		3.07	+/-0.430	0.143	0.100	pCi/g						
Manganese-54	U	ND	+/-0.128	0.0681	0.100	pCi/g						
Mercury-203	U	ND	+/-0.110	0.104	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.46	4.49	1000	pCi/g						
Neptunium-239	U	ND	+/-0.221	0.402	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0362	0.0628	1.00	pCi/g						
Niobium-95	U	ND	+/-0.131	0.166	0.050	pCi/g						
Potassium-40		1.43	+/-0.676	0.638	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0417	0.0776	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0483	0.0894	1.00	pCi/g						
Radium-228		4.76	+/-0.789	0.219	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.367	0.609	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-20
Sample ID: 50722030

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0423	0.0783	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0402	0.062	0.080	pCi/g					
Thallium-208		1.55	+/-0.211	0.0681	0.080	pCi/g					
Thorium-230		2.62	+/-0.368	0.129	1.00	pCi/g					
Thorium-234	U	ND	+/-2.22	2.88	2.00	pCi/g					
Tin-113	U	ND	+/-0.0592	0.0998	0.100	pCi/g					
Uranium-235		0.550	+/-0.371	0.481	0.500	pCi/g					
Uranium-238	U	ND	+/-2.22	2.88	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0408	0.0808	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0877	0.122	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.165	0.167	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-20
Sample ID: 50722030

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-19	Project:	RNSC00199
Sample ID:	50722031	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.606	+/-0.171	0.129	0.800	pCi/g		CRB	11/08/01	2011	118047	1
Americium-241	U	ND	+/-0.0344	0.0612	0.200	pCi/g						
Antimony-124	U	ND	+/-0.032	0.0544	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0631	0.118	0.200	pCi/g						
Barium-133	U	ND	+/-0.0296	0.048	0.100	pCi/g						
Barium-140	U	ND	+/-0.511	0.924	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.281	0.534	0.700	pCi/g						
Bismuth-212		0.532	+/-0.356	0.413	0.500	pCi/g						
Bismuth-214		0.388	+/-0.099	0.0882	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0203	0.0365	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0611	0.117	0.100	pCi/g						
Cerium-144	U	ND	+/-0.133	0.246	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0247	0.0397	0.100	pCi/g						
Cesium-136	U	ND	+/-0.196	0.368	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0261	0.0436	0.100	pCi/g						
Chromium-51	U	ND	+/-0.386	0.728	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0321	0.0614	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0157	0.0279	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0357	0.0592	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0283	0.0542	0.100	pCi/g						
Europium-152	U	ND	+/-0.0692	0.130	0.200	pCi/g						
Europium-154	U	ND	+/-0.0556	0.123	0.500	pCi/g						
Europium-155	U	ND	+/-0.0582	0.114	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0275	0.0533	0.100	pCi/g						
Iron-59	U	ND	+/-0.0845	0.160	0.300	pCi/g						
Lead-210	U	ND	+/-0.661	0.546	4.00	pCi/g						
Lead-212		0.612	+/-0.0816	0.0756	0.100	pCi/g						
Lead-214		0.491	+/-0.128	0.0811	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0294	0.0552	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0378	0.0686	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.49	2.94	1000	pCi/g						
Neptunium-239	U	ND	+/-0.105	0.199	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0234	0.0462	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0769	0.105	0.050	pCi/g						
Potassium-40	U	ND	+/-0.373	0.536	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0231	0.0451	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0284	0.0537	1.00	pCi/g						
Radium-228		0.606	+/-0.171	0.129	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.202	0.368	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-19
Sample ID: 50722031

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0248	0.0482	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0201	0.0445	0.080	pCi/g					
Thallium-208		0.187	+/-0.0658	0.0479	0.080	pCi/g					
Thorium-230		0.388	+/-0.099	0.0882	1.00	pCi/g					
Thorium-234		0.810	+/-0.620	0.611	2.00	pCi/g					
Tin-113	U	ND	+/-0.0319	0.0604	0.100	pCi/g					
Uranium-235	U	ND	+/-0.131	0.247	0.500	pCi/g					
Uranium-238		0.810	+/-0.620	0.611	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0308	0.064	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0555	0.0856	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0599	0.119	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-19
Sample ID: 50722031

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-18	Project:	RNSC00199
Sample ID:	50722032	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.157	0.113	0.800	pCi/g		CRB	11/08/01	2012	118047	1
Americium-241	U	ND	+/-0.0725	0.136	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0248	0.0512	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0415	0.0887	0.200	pCi/g						
Barium-133	U	ND	+/-0.0245	0.0359	0.100	pCi/g						
Barium-140	U	ND	+/-0.427	0.830	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.226	0.438	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.258	0.298	0.500	pCi/g						
Bismuth-214		0.219	+/-0.099	0.0694	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0161	0.0304	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0463	0.0902	0.100	pCi/g						
Cerium-144	U	ND	+/-0.102	0.186	0.500	pCi/g						
Cesium-134	U	ND	+/-0.021	0.0321	0.100	pCi/g						
Cesium-136	U	ND	+/-0.131	0.229	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0283	0.0435	0.100	pCi/g						
Chromium-51	U	ND	+/-0.348	0.645	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0218	0.0416	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0127	0.0244	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0232	0.0486	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0199	0.0369	0.100	pCi/g						
Europium-152	U	ND	+/-0.0568	0.0979	0.200	pCi/g						
Europium-154	U	ND	+/-0.0497	0.107	0.500	pCi/g						
Europium-155	U	ND	+/-0.0815	0.101	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0227	0.0401	0.100	pCi/g						
Iron-59	U	ND	+/-0.0498	0.0995	0.300	pCi/g						
Lead-210	U	ND	+/-2.06	3.94	4.00	pCi/g						
Lead-212		0.484	+/-0.0835	0.0517	0.100	pCi/g						
Lead-214		0.332	+/-0.0907	0.0585	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0195	0.0367	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0276	0.0545	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.05	2.18	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0853	0.168	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0173	0.0316	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0371	0.0607	0.050	pCi/g						
Potassium-40	U	ND	+/-0.675	0.305	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0208	0.0395	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0207	0.0383	1.00	pCi/g						
Radium-228		0.312	+/-0.157	0.113	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.162	0.310	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-18
Sample ID: 50722032

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0232	0.0361	0.080	pCi/g					
Sodium-22	U	ND	+/-0.018	0.0388	0.080	pCi/g					
Thallium-208		0.0896	+/-0.0521	0.0321	0.080	pCi/g					
Thorium-230		0.219	+/-0.099	0.0694	1.00	pCi/g					
Thorium-234	U	ND	+/-1.26	1.10	2.00	pCi/g					
Tin-113	U	ND	+/-0.0262	0.0463	0.100	pCi/g					
Uranium-235	U	ND	+/-0.0977	0.193	0.500	pCi/g					
Uranium-238	U	ND	+/-1.26	1.10	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0204	0.0249	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0403	0.0617	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0394	0.0789	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-18
Sample ID: 50722032

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-17	Project:	RNSC00199
Sample ID:	50722033	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.36	+/-0.436	0.161	0.800	pCi/g		CRB	11/08/01	2012	118047	1
Americium-241	U	ND	+/-0.118	0.233	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0371	0.0675	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0721	0.140	0.200	pCi/g						
Barium-133	U	ND	+/-0.0367	0.0606	0.100	pCi/g						
Barium-140	U	ND	+/-0.597	1.08	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.322	0.614	0.700	pCi/g						
Bismuth-212		1.72	+/-0.497	0.410	0.500	pCi/g						
Bismuth-214		1.06	+/-0.197	0.0963	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0264	0.0482	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0792	0.147	0.100	pCi/g						
Cerium-144	U	ND	+/-0.171	0.323	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0289	0.0461	0.100	pCi/g						
Cesium-136	U	ND	+/-0.206	0.370	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0311	0.0528	0.100	pCi/g						
Chromium-51	U	ND	+/-0.495	0.904	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.031	0.0587	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0217	0.0397	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0312	0.060	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0263	0.0556	0.100	pCi/g						
Europium-152	U	ND	+/-0.0822	0.138	0.200	pCi/g						
Europium-154	U	ND	+/-0.0754	0.152	0.500	pCi/g						
Europium-155	U	ND	+/-0.115	0.151	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0338	0.0597	0.100	pCi/g						
Iron-59	U	ND	+/-0.0799	0.131	0.300	pCi/g						
Lead-210	U	ND	+/-3.40	5.61	4.00	pCi/g						
Lead-212		2.59	+/-0.307	0.0797	0.100	pCi/g						
Lead-214		1.31	+/-0.209	0.0963	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0392	0.060	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0946	0.074	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.64	3.05	1000	pCi/g						
Neptunium-239	U	ND	+/-0.148	0.269	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0269	0.0465	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0879	0.104	0.050	pCi/g						
Potassium-40	U	ND	+/-0.551	0.402	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0282	0.0486	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0332	0.0639	1.00	pCi/g						
Radium-228		2.36	+/-0.436	0.161	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.231	0.430	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-17
Sample ID: 50722033

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0285	0.0486	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0272	0.055	0.080	pCi/g					
Thallium-208		0.776	+/-0.123	0.0478	0.080	pCi/g					
Thorium-230		1.06	+/-0.197	0.0963	1.00	pCi/g					
Thorium-234	U	ND	+/-1.73	1.86	2.00	pCi/g					
Tin-113	U	ND	+/-0.0384	0.0726	0.100	pCi/g					
Uranium-235	U	ND	+/-0.172	0.321	0.500	pCi/g					
Uranium-238	U	ND	+/-1.73	1.86	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0319	0.0638	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0612	0.0869	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.128	0.145	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-17
Sample ID: 50722033

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-13	Project:	RNSC00199
Sample ID:	50722034	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.162	0.320	0.800	pCi/g		CRB	11/08/01	2013	118047	1
Americium-241	U	ND	+/-0.142	0.204	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0299	0.0504	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0618	0.118	0.200	pCi/g						
Barium-133	U	ND	+/-0.0316	0.0606	0.100	pCi/g						
Barium-140	U	ND	+/-0.500	0.944	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.283	0.528	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.217	0.445	0.500	pCi/g						
Bismuth-214	U	ND	+/-0.110	0.154	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0214	0.0398	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0615	0.115	0.100	pCi/g						
Cerium-144	U	ND	+/-0.137	0.260	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0222	0.0364	0.100	pCi/g						
Cesium-136	U	ND	+/-0.180	0.361	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0238	0.0454	0.100	pCi/g						
Chromium-51	U	ND	+/-0.397	0.698	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0241	0.048	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0157	0.0296	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0285	0.0515	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0329	0.0437	0.100	pCi/g						
Europium-152	U	ND	+/-0.0671	0.115	0.200	pCi/g						
Europium-154	U	ND	+/-0.0531	0.112	0.500	pCi/g						
Europium-155	U	ND	+/-0.0633	0.122	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0263	0.0517	0.100	pCi/g						
Iron-59	U	ND	+/-0.0659	0.109	0.300	pCi/g						
Lead-210	U	ND	+/-4.37	6.86	4.00	pCi/g						
Lead-212		0.927	+/-0.129	0.0669	0.100	pCi/g						
Lead-214		0.451	+/-0.144	0.0788	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0219	0.041	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0364	0.0668	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.41	2.66	1000	pCi/g						
Neptunium-239	U	ND	+/-0.186	0.231	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0204	0.0348	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0456	0.0863	0.050	pCi/g						
Potassium-40	U	ND	+/-0.392	0.463	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0234	0.0434	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0281	0.0478	1.00	pCi/g						
Radium-228	U	ND	+/-0.162	0.320	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.187	0.339	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-13
Sample ID: 50722034

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0226	0.0431	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0192	0.0404	0.080	pCi/g					
Thallium-208		0.235	+/-0.0652	0.0417	0.080	pCi/g					
Thorium-230		0.430	+/-0.110	0.0636	1.00	pCi/g					
Thorium-234	U	ND	+/-1.26	1.73	2.00	pCi/g					
Tin-113	U	ND	+/-0.0302	0.0574	0.100	pCi/g					
Uranium-235	U	ND	+/-0.131	0.248	0.500	pCi/g					
Uranium-238	U	ND	+/-1.26	1.73	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0254	0.0532	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0801	0.0811	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0517	0.105	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-13
Sample ID: 50722034

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-14	Project:	RNSC00199
Sample ID:	50722035	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.40	+/-0.304	0.139	0.800	pCi/g		CRB	11/08/01	2013	118047	1
Americium-241	U	ND	+/-0.163	0.261	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0293	0.0504	0.100	pCi/g						
Antimony-125	U	ND	+/-0.056	0.105	0.200	pCi/g						
Barium-133	U	ND	+/-0.0334	0.0491	0.100	pCi/g						
Barium-140	U	ND	+/-0.479	0.830	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.276	0.511	0.700	pCi/g						
Bismuth-212		0.909	+/-0.449	0.315	0.500	pCi/g						
Bismuth-214		0.718	+/-0.130	0.0738	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0237	0.0429	0.050	pCi/g						
Cerium-141	U	ND	+/-0.068	0.126	0.100	pCi/g						
Cerium-144	U	ND	+/-0.151	0.275	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0303	0.0372	0.100	pCi/g						
Cesium-136	U	ND	+/-0.152	0.324	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0272	0.0472	0.100	pCi/g						
Chromium-51	U	ND	+/-0.413	0.776	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0277	0.0525	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0189	0.0355	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0241	0.0436	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0187	0.036	0.100	pCi/g						
Europium-152	U	ND	+/-0.058	0.101	0.200	pCi/g						
Europium-154	U	ND	+/-0.0662	0.111	0.500	pCi/g						
Europium-155	U	ND	+/-0.0776	0.149	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0271	0.0508	0.100	pCi/g						
Iron-59	U	ND	+/-0.0548	0.0962	0.300	pCi/g						
Lead-210	U	ND	+/-5.65	9.73	4.00	pCi/g						
Lead-212		1.69	+/-0.214	0.0672	0.100	pCi/g						
Lead-214		0.796	+/-0.147	0.0804	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0238	0.045	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0832	0.0662	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.29	2.37	1000	pCi/g						
Neptunium-239	U	ND	+/-0.134	0.249	2.00	pCi/g						
Niobium-94	U	ND	+/-0.022	0.041	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0732	0.0895	0.050	pCi/g						
Potassium-40		0.941	+/-0.407	0.383	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0244	0.0431	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0312	0.0567	1.00	pCi/g						
Radium-228		1.40	+/-0.304	0.139	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.213	0.379	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-14
Sample ID: 50722035

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0293	0.0469	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0239	0.0401	0.080	pCi/g					
Thallium-208		0.499	+/-0.0807	0.0404	0.080	pCi/g					
Thorium-230		0.718	+/-0.130	0.0738	1.00	pCi/g					
Thorium-234	U	ND	+/-1.32	2.25	2.00	pCi/g					
Tin-113	U	ND	+/-0.0328	0.0587	0.100	pCi/g					
Uranium-235	U	ND	+/-0.149	0.277	0.500	pCi/g					
Uranium-238	U	ND	+/-1.32	2.25	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0266	0.0535	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0474	0.0598	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0558	0.106	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-14
Sample ID: 50722035

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-16
Sample ID: 50722036
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		5.89	+/-0.992	0.242	0.800	pCi/g		CRB	11/08/01	2013	118047	1
Americium-241	U	ND	+/-0.300	0.525	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0576	0.105	0.100	pCi/g						
Antimony-125	U	ND	+/-0.114	0.211	0.200	pCi/g						
Barium-133	U	ND	+/-0.0593	0.0887	0.100	pCi/g						
Barium-140	U	ND	+/-0.999	1.84	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.519	0.969	0.700	pCi/g						
Bismuth-212		3.47	+/-0.850	0.580	0.500	pCi/g						
Bismuth-214		3.87	+/-0.501	0.135	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0438	0.0797	0.050	pCi/g						
Cerium-141	U	ND	+/-0.130	0.237	0.100	pCi/g						
Cerium-144	U	ND	+/-0.277	0.507	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0443	0.071	0.100	pCi/g						
Cesium-136	U	ND	+/-0.315	0.560	0.300	pCi/g						
Cesium-137	U	ND	+/-0.045	0.0757	0.100	pCi/g						
Chromium-51	U	ND	+/-0.812	1.41	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0501	0.089	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0347	0.0642	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0616	0.0969	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0437	0.0657	0.100	pCi/g						
Europium-152	U	ND	+/-0.128	0.215	0.200	pCi/g						
Europium-154	U	ND	+/-0.117	0.227	0.500	pCi/g						
Europium-155	U	ND	+/-0.272	0.267	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0529	0.0944	0.100	pCi/g						
Iron-59	U	ND	+/-0.150	0.212	0.300	pCi/g						
Lead-210	U	ND	+/-10.9	19.7	4.00	pCi/g						
Lead-212		6.34	+/-0.774	0.137	0.100	pCi/g						
Lead-214		4.61	+/-0.616	0.146	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0603	0.0917	0.100	pCi/g						
Mercury-203	U	ND	+/-0.123	0.125	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.46	4.52	1000	pCi/g						
Neptunium-239	U	ND	+/-0.387	0.452	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0423	0.0717	1.00	pCi/g						
Niobium-95	U	ND	+/-0.163	0.190	0.050	pCi/g						
Potassium-40	U	ND	+/-0.507	0.949	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0415	0.0754	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0593	0.0973	1.00	pCi/g						
Radium-228		5.89	+/-0.992	0.242	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.386	0.718	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-16
Sample ID: 50722036

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0619	0.0793	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0423	0.0822	0.080	pCi/g					
Thallium-208		1.84	+/-0.229	0.0784	0.080	pCi/g					
Thorium-230		3.87	+/-0.501	0.135	1.00	pCi/g					
Thorium-234	U	ND	+/-4.09	4.10	2.00	pCi/g					
Tin-113	U	ND	+/-0.0635	0.108	0.100	pCi/g					
Uranium-235	U	ND	+/-0.274	0.504	0.500	pCi/g					
Uranium-238	U	ND	+/-4.09	4.10	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0523	0.103	0.100	pCi/g					
Zinc-65	U	ND	+/-0.096	0.159	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.122	0.198	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-16
Sample ID: 50722036

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-16	Project:	RNSC00199
Sample ID:	50722037	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.46	+/-0.364	0.167	0.800	pCi/g		CRB	11/08/01	2014	118047	1
Americium-241	U	ND	+/-0.0349	0.0643	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0325	0.0607	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0624	0.110	0.200	pCi/g						
Barium-133	U	ND	+/-0.0309	0.0493	0.100	pCi/g						
Barium-140	U	ND	+/-0.547	1.04	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.263	0.477	0.700	pCi/g						
Bismuth-212		0.900	+/-0.535	0.367	0.500	pCi/g						
Bismuth-214		1.03	+/-0.193	0.079	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0206	0.0395	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0876	0.108	0.100	pCi/g						
Cerium-144	U	ND	+/-0.126	0.241	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0261	0.0406	0.100	pCi/g						
Cesium-136	U	ND	+/-0.218	0.437	0.300	pCi/g						
Cesium-137	U	ND	+/-0.033	0.0506	0.100	pCi/g						
Chromium-51	U	ND	+/-0.400	0.705	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0379	0.0568	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0164	0.0297	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0344	0.0579	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0235	0.0441	0.100	pCi/g						
Europium-152	U	ND	+/-0.0686	0.106	0.200	pCi/g						
Europium-154	U	ND	+/-0.0707	0.141	0.500	pCi/g						
Europium-155	U	ND	+/-0.123	0.107	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0272	0.0485	0.100	pCi/g						
Iron-59	U	ND	+/-0.0768	0.138	0.300	pCi/g						
Lead-210		1.71	+/-0.655	0.454	4.00	pCi/g						
Lead-212		1.79	+/-0.283	0.066	0.100	pCi/g						
Lead-214		1.21	+/-0.209	0.079	0.100	pCi/g						
Manganese-54	U	ND	+/-0.028	0.0502	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0814	0.0649	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.45	2.74	1000	pCi/g						
Neptunium-239	U	ND	+/-0.116	0.201	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0246	0.0441	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0641	0.0895	0.050	pCi/g						
Potassium-40	U	ND	+/-0.448	0.366	1.00	pCi/g						
Promethium-144	U	ND	+/-0.024	0.0429	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0292	0.0567	1.00	pCi/g						
Radium-228		1.46	+/-0.364	0.167	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.225	0.445	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-16
Sample ID: 50722037

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0281	0.0508	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0256	0.0513	0.080	pCi/g					
Thallium-208		0.552	+/-0.0924	0.0477	0.080	pCi/g					
Thorium-230		1.03	+/-0.193	0.079	1.00	pCi/g					
Thorium-234		1.25	+/-0.638	0.625	2.00	pCi/g					
Tin-113	U	ND	+/-0.0337	0.0579	0.100	pCi/g					
Uranium-235	U	ND	+/-0.218	0.272	0.500	pCi/g					
Uranium-238		1.25	+/-0.638	0.625	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.035	0.0732	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0595	0.0869	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0646	0.126	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-16
Sample ID: 50722037

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-12	Project:	RNSC00199
Sample ID:	50722038	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		6.03	+/-1.02	0.198	0.800	pCi/g		CRB	11/08/01	2019	118047	1
Americium-241	U	ND	+/-0.331	0.544	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0471	0.0886	0.100	pCi/g						
Antimony-125	U	ND	+/-0.102	0.182	0.200	pCi/g						
Barium-133	U	ND	+/-0.0526	0.0829	0.100	pCi/g						
Barium-140	U	ND	+/-0.857	1.51	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.462	0.668	0.700	pCi/g						
Bismuth-212		3.93	+/-0.790	0.533	0.500	pCi/g						
Bismuth-214		2.26	+/-0.311	0.120	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0385	0.0712	0.050	pCi/g						
Cerium-141	U	ND	+/-0.205	0.218	0.100	pCi/g						
Cerium-144	U	ND	+/-0.255	0.481	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0372	0.0597	0.100	pCi/g						
Cesium-136	U	ND	+/-0.247	0.434	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0448	0.070	0.100	pCi/g						
Chromium-51	U	ND	+/-0.962	1.25	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0492	0.078	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0312	0.0583	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0412	0.0909	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0354	0.0685	0.100	pCi/g						
Europium-152	U	ND	+/-0.113	0.187	0.200	pCi/g						
Europium-154	U	ND	+/-0.104	0.167	0.500	pCi/g						
Europium-155	U	ND	+/-0.259	0.249	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0478	0.0848	0.100	pCi/g						
Iron-59	U	ND	+/-0.102	0.158	0.300	pCi/g						
Lead-210	U	ND	+/-14.2	23.5	4.00	pCi/g						
Lead-212		6.79	+/-0.763	0.121	0.100	pCi/g						
Lead-214		2.71	+/-0.381	0.137	0.100	pCi/g						
Manganese-54	U	ND	+/-0.048	0.0839	0.100	pCi/g						
Mercury-203	U	ND	+/-0.125	0.126	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.25	4.10	1000	pCi/g						
Neptunium-239	U	ND	+/-0.373	0.417	2.00	pCi/g						
Niobium-94	U	ND	+/-0.036	0.0684	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0899	0.149	0.050	pCi/g						
Potassium-40	U	ND	+/-0.515	0.590	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0369	0.0645	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0599	0.0886	1.00	pCi/g						
Radium-228		6.03	+/-1.02	0.198	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.339	0.636	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-12
Sample ID: 50722038

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0385	0.0696	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0373	0.0605	0.080	pCi/g					
Thallium-208		1.98	+/-0.245	0.0651	0.080	pCi/g					
Thorium-230		2.26	+/-0.311	0.120	1.00	pCi/g					
Thorium-234	U	ND	+/-3.82	3.88	2.00	pCi/g					
Tin-113	U	ND	+/-0.059	0.098	0.100	pCi/g					
Uranium-235	U	ND	+/-0.269	0.461	0.500	pCi/g					
Uranium-238	U	ND	+/-3.82	3.88	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0402	0.0688	0.100	pCi/g					
Zinc-65	U	ND	+/-0.103	0.119	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.174	0.188	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-12
Sample ID: 50722038

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-6	Project:	RNSC00199
Sample ID:	50722039	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.534	+/-0.174	0.157	0.800	pCi/g		CRB	11/09/01	0610	118047	1
Americium-241	U	ND	+/-0.0235	0.0632	0.200	pCi/g						
Antimony-124	U	ND	+/-0.038	0.0708	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0642	0.126	0.200	pCi/g						
Barium-133	U	ND	+/-0.0326	0.0536	0.100	pCi/g						
Barium-140	U	ND	+/-0.637	1.16	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.325	0.633	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.242	0.442	0.500	pCi/g						
Bismuth-214		0.378	+/-0.132	0.0858	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0214	0.039	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0669	0.117	0.100	pCi/g						
Cerium-144	U	ND	+/-0.128	0.236	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0299	0.0448	0.100	pCi/g						
Cesium-136	U	ND	+/-0.232	0.417	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0303	0.0509	0.100	pCi/g						
Chromium-51	U	ND	+/-0.435	0.781	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0364	0.0665	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0156	0.0298	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0372	0.0681	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0312	0.0543	0.100	pCi/g						
Europium-152	U	ND	+/-0.0712	0.120	0.200	pCi/g						
Europium-154	U	ND	+/-0.0798	0.157	0.500	pCi/g						
Europium-155	U	ND	+/-0.0548	0.109	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0286	0.0503	0.100	pCi/g						
Iron-59	U	ND	+/-0.0662	0.142	0.300	pCi/g						
Lead-210		0.782	+/-0.681	0.563	4.00	pCi/g						
Lead-212		0.506	+/-0.096	0.0624	0.100	pCi/g						
Lead-214		0.453	+/-0.139	0.0801	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0456	0.0545	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0382	0.0687	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.63	2.95	1000	pCi/g						
Neptunium-239	U	ND	+/-0.107	0.204	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0268	0.0444	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0599	0.0945	0.050	pCi/g						
Potassium-40		1.09	+/-0.468	0.529	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0273	0.0502	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0324	0.0608	1.00	pCi/g						
Radium-228		0.534	+/-0.174	0.157	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.262	0.464	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-6
Sample ID: 50722039

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.028	0.0547	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0288	0.0568	0.080	pCi/g					
Thallium-208		0.113	+/-0.0519	0.0514	0.080	pCi/g					
Thorium-230		0.378	+/-0.132	0.0858	1.00	pCi/g					
Thorium-234		0.782	+/-0.643	0.576	2.00	pCi/g					
Tin-113	U	ND	+/-0.0356	0.0604	0.100	pCi/g					
Uranium-235	U	ND	+/-0.246	0.238	0.500	pCi/g					
Uranium-238		0.782	+/-0.643	0.576	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0261	0.0587	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0697	0.114	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0698	0.126	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-6
Sample ID: 50722039

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-7	Project:	RNSC00199
Sample ID:	50722040	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.170	+/-0.0922	0.146	0.800	pCi/g		CRB	11/09/01	0611	118047	1
Americium-241	U	ND	+/-0.0428	0.0804	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0233	0.0362	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0538	0.0592	0.200	pCi/g						
Barium-133	U	ND	+/-0.0176	0.0297	0.100	pCi/g						
Barium-140	U	ND	+/-0.317	0.596	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.163	0.307	0.700	pCi/g						
Bismuth-212		0.186	+/-0.224	0.181	0.500	pCi/g						
Bismuth-214		0.269	+/-0.0714	0.0484	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0132	0.0246	0.050	pCi/g						
Cerium-141	U	ND	+/-0.039	0.0715	0.100	pCi/g						
Cerium-144	U	ND	+/-0.0846	0.159	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0155	0.024	0.100	pCi/g						
Cesium-136	U	ND	+/-0.103	0.190	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0129	0.0242	0.100	pCi/g						
Chromium-51	U	ND	+/-0.227	0.430	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0179	0.0335	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.00988	0.0183	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0191	0.0265	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0129	0.0235	0.100	pCi/g						
Europium-152	U	ND	+/-0.0332	0.066	0.200	pCi/g						
Europium-154	U	ND	+/-0.0426	0.0671	0.500	pCi/g						
Europium-155	U	ND	+/-0.0409	0.0803	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0159	0.0288	0.100	pCi/g						
Iron-59	U	ND	+/-0.0412	0.078	0.300	pCi/g						
Lead-210	U	ND	+/-1.61	1.47	4.00	pCi/g						
Lead-212		0.310	+/-0.0572	0.0406	0.100	pCi/g						
Lead-214		0.294	+/-0.0649	0.0445	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0148	0.0263	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0212	0.0423	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.01	1.34	1000	pCi/g						
Neptunium-239	U	ND	+/-0.073	0.136	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0124	0.0245	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0277	0.0536	0.050	pCi/g						
Potassium-40	U	ND	+/-0.289	0.245	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0146	0.0238	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0155	0.0298	1.00	pCi/g						
Radium-228		0.170	+/-0.0922	0.146	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.125	0.203	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-7
Sample ID: 50722040

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0138	0.0257	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0154	0.0243	0.080	pCi/g					
Thallium-208		0.0859	+/-0.0289	0.0244	0.080	pCi/g					
Thorium-230		0.269	+/-0.0714	0.0484	1.00	pCi/g					
Thorium-234		0.823	+/-0.850	0.674	2.00	pCi/g					
Tin-113	U	ND	+/-0.0174	0.0309	0.100	pCi/g					
Uranium-235	U	ND	+/-0.0827	0.158	0.500	pCi/g					
Uranium-238		0.823	+/-0.850	0.674	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0177	0.0341	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0362	0.0586	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.032	0.0608	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-7
Sample ID: 50722040

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-10	Project:	RNSC00199
Sample ID:	50722041	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.903	+/-0.248	0.159	0.800	pCi/g		CRB	11/08/01	1311	118048	1
Americium-241	U	ND	+/-0.119	0.197	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0386	0.0695	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0612	0.117	0.200	pCi/g						
Barium-133	U	ND	+/-0.0347	0.0531	0.100	pCi/g						
Barium-140	U	ND	+/-0.541	0.990	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.289	0.496	0.700	pCi/g						
Bismuth-212		0.622	+/-0.299	0.360	0.500	pCi/g						
Bismuth-214		0.835	+/-0.153	0.0949	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0246	0.044	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0718	0.133	0.100	pCi/g						
Cerium-144	U	ND	+/-0.152	0.282	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0306	0.0495	0.100	pCi/g						
Cesium-136	U	ND	+/-0.219	0.364	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0274	0.0488	0.100	pCi/g						
Chromium-51	U	ND	+/-0.429	0.823	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.031	0.0602	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0198	0.0371	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.032	0.0589	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0237	0.0458	0.100	pCi/g						
Europium-152	U	ND	+/-0.0726	0.128	0.200	pCi/g						
Europium-154	U	ND	+/-0.141	0.158	0.500	pCi/g						
Europium-155	U	ND	+/-0.0762	0.140	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0292	0.0556	0.100	pCi/g						
Iron-59	U	ND	+/-0.0863	0.163	0.300	pCi/g						
Lead-210	U	ND	+/-2.79	5.09	4.00	pCi/g						
Lead-212		1.05	+/-0.157	0.0727	0.100	pCi/g						
Lead-214		0.782	+/-0.175	0.0967	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0281	0.0545	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0424	0.073	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.34	2.51	1000	pCi/g						
Neptunium-239	U	ND	+/-0.139	0.250	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0241	0.0445	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0612	0.104	0.050	pCi/g						
Potassium-40		0.939	+/-0.515	0.463	1.00	pCi/g						
Promethium-144	U	ND	+/-0.027	0.0442	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0301	0.0541	1.00	pCi/g						
Radium-228		0.903	+/-0.248	0.159	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.227	0.418	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-10
Sample ID: 50722041

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0255	0.0483	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0509	0.0544	0.080	pCi/g					
Thallium-208		0.294	+/-0.0734	0.0458	0.080	pCi/g					
Thorium-230		0.835	+/-0.153	0.0949	1.00	pCi/g					
Thorium-234	U	ND	+/-0.995	1.71	2.00	pCi/g					
Tin-113	U	ND	+/-0.0367	0.0653	0.100	pCi/g					
Uranium-235	U	ND	+/-0.153	0.283	0.500	pCi/g					
Uranium-238	U	ND	+/-0.995	1.71	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0297	0.0608	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0601	0.116	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0662	0.118	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-10
Sample ID: 50722041

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-8	Project:	RNSC00199
Sample ID:	50722042	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.149	0.247	0.800	pCi/g		CRB	11/08/01	1312	118048	1
Americium-241	U	ND	+/-0.0299	0.0522	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0509	0.0594	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0615	0.104	0.200	pCi/g						
Barium-133	U	ND	+/-0.0279	0.0468	0.100	pCi/g						
Barium-140	U	ND	+/-0.497	0.860	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.248	0.484	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.205	0.377	0.500	pCi/g						
Bismuth-214	U	ND	+/-0.109	0.156	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0182	0.0345	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0548	0.104	0.100	pCi/g						
Cerium-144	U	ND	+/-0.121	0.231	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0285	0.0388	0.100	pCi/g						
Cesium-136	U	ND	+/-0.191	0.361	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0257	0.0437	0.100	pCi/g						
Chromium-51	U	ND	+/-0.353	0.730	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0271	0.0528	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0133	0.025	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0272	0.0508	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0202	0.0393	0.100	pCi/g						
Europium-152	U	ND	+/-0.0548	0.108	0.200	pCi/g						
Europium-154	U	ND	+/-0.0787	0.151	0.500	pCi/g						
Europium-155	U	ND	+/-0.0506	0.0959	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0267	0.0414	0.100	pCi/g						
Iron-59	U	ND	+/-0.0614	0.121	0.300	pCi/g						
Lead-210		0.880	+/-0.677	0.452	4.00	pCi/g						
Lead-212		0.387	+/-0.068	0.0589	0.100	pCi/g						
Lead-214		0.369	+/-0.0835	0.0745	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0265	0.042	0.100	pCi/g						
Mercury-203	U	ND	+/-0.033	0.0628	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.39	2.12	1000	pCi/g						
Neptunium-239	U	ND	+/-0.096	0.176	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0299	0.0406	1.00	pCi/g						
Niobium-95	U	ND	+/-0.041	0.0765	0.050	pCi/g						
Potassium-40		1.13	+/-0.482	0.351	1.00	pCi/g						
Promethium-144	U	ND	+/-0.030	0.0443	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0231	0.0423	1.00	pCi/g						
Radium-228	U	ND	+/-0.149	0.247	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.223	0.397	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-8
Sample ID: 50722042

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0252	0.0512	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0285	0.0545	0.080	pCi/g					
Thallium-208		0.132	+/-0.0419	0.0411	0.080	pCi/g					
Thorium-230		0.328	+/-0.109	0.0793	1.00	pCi/g					
Thorium-234	U	ND	+/-0.492	0.569	2.00	pCi/g					
Tin-113	U	ND	+/-0.030	0.0579	0.100	pCi/g					
Uranium-235	U	ND	+/-0.115	0.220	0.500	pCi/g					
Uranium-238	U	ND	+/-0.492	0.569	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.031	0.0608	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0533	0.0678	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0512	0.101	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-8
Sample ID: 50722042

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-4	Project:	RNSC00199
Sample ID:	50722043	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.38	+/-0.437	0.182	0.800	pCi/g		CRB	11/08/01	1511	118048	1
Americium-241	U	ND	+/-0.144	0.233	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0761	0.0816	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0777	0.153	0.200	pCi/g						
Barium-133	U	ND	+/-0.039	0.0656	0.100	pCi/g						
Barium-140	U	ND	+/-0.695	1.28	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.359	0.622	0.700	pCi/g						
Bismuth-212		1.29	+/-0.389	0.447	0.500	pCi/g						
Bismuth-214		1.72	+/-0.256	0.105	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0354	0.0524	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0869	0.162	0.100	pCi/g						
Cerium-144	U	ND	+/-0.204	0.336	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0372	0.0519	0.100	pCi/g						
Cesium-136	U	ND	+/-0.211	0.392	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0279	0.0486	0.100	pCi/g						
Chromium-51	U	ND	+/-0.527	0.934	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0353	0.0599	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0224	0.0409	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0391	0.0659	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0268	0.0479	0.100	pCi/g						
Europium-152	U	ND	+/-0.078	0.140	0.200	pCi/g						
Europium-154	U	ND	+/-0.0806	0.156	0.500	pCi/g						
Europium-155	U	ND	+/-0.0887	0.172	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0364	0.0636	0.100	pCi/g						
Iron-59	U	ND	+/-0.0802	0.138	0.300	pCi/g						
Lead-210	U	ND	+/-3.66	6.22	4.00	pCi/g						
Lead-212		2.49	+/-0.299	0.0871	0.100	pCi/g						
Lead-214		1.90	+/-0.282	0.105	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0655	0.059	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0829	0.0823	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.72	3.06	1000	pCi/g						
Neptunium-239	U	ND	+/-0.156	0.294	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0289	0.0536	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0642	0.110	0.050	pCi/g						
Potassium-40		1.19	+/-0.676	0.477	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0294	0.0525	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0412	0.0657	1.00	pCi/g						
Radium-228		2.38	+/-0.437	0.182	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.265	0.498	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-4 Project: RNSC00199
Sample ID: 50722043 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0258	0.045	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0292	0.0567	0.080	pCi/g					
Thallium-208		0.817	+/-0.122	0.0473	0.080	pCi/g					
Thorium-230		1.72	+/-0.256	0.105	1.00	pCi/g					
Thorium-234	U	ND	+/-1.60	1.98	2.00	pCi/g					
Tin-113	U	ND	+/-0.0424	0.0743	0.100	pCi/g					
Uranium-235	U	ND	+/-0.187	0.347	0.500	pCi/g					
Uranium-238	U	ND	+/-1.60	1.98	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0394	0.0881	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0748	0.120	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0751	0.147	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-4 Project: RNSC00199
Sample ID: 50722043 Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-9	Project:	RNSC00199
Sample ID:	50722044	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228	U	ND	+/-0.138	0.209	0.800	pCi/g		CRB	11/08/01	1316	118048	1
Americium-241	U	ND	+/-0.101	0.171	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0267	0.0504	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0531	0.0929	0.200	pCi/g						
Barium-133	U	ND	+/-0.0251	0.0455	0.100	pCi/g						
Barium-140	U	ND	+/-0.376	0.721	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.217	0.397	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.152	0.307	0.500	pCi/g						
Bismuth-214		0.316	+/-0.0809	0.063	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0163	0.0307	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0498	0.0965	0.100	pCi/g						
Cerium-144	U	ND	+/-0.143	0.215	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0211	0.034	0.100	pCi/g						
Cesium-136	U	ND	+/-0.165	0.340	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0192	0.0361	0.100	pCi/g						
Chromium-51	U	ND	+/-0.306	0.553	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0219	0.0367	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0135	0.0256	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0212	0.0472	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0188	0.035	0.100	pCi/g						
Europium-152	U	ND	+/-0.0493	0.0897	0.200	pCi/g						
Europium-154	U	ND	+/-0.056	0.109	0.500	pCi/g						
Europium-155	U	ND	+/-0.0482	0.0933	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0214	0.0399	0.100	pCi/g						
Iron-59	U	ND	+/-0.0546	0.0938	0.300	pCi/g						
Lead-210	U	ND	+/-3.37	5.53	4.00	pCi/g						
Lead-212		0.316	+/-0.101	0.0587	0.100	pCi/g						
Lead-214		0.328	+/-0.0878	0.0653	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0187	0.0371	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0313	0.0615	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.08	2.15	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0967	0.190	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0217	0.0362	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0315	0.0638	0.050	pCi/g						
Potassium-40	U	ND	+/-0.254	0.618	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0172	0.0373	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0215	0.0407	1.00	pCi/g						
Radium-228	U	ND	+/-0.138	0.209	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.312	0.279	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-9
Sample ID: 50722044

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0186	0.0353	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0197	0.0393	0.080	pCi/g					
Thallium-208		0.0769	+/-0.0473	0.0382	0.080	pCi/g					
Thorium-230		0.316	+/-0.0809	0.063	1.00	pCi/g					
Thorium-234	U	ND	+/-0.819	1.40	2.00	pCi/g					
Tin-113	U	ND	+/-0.0271	0.0441	0.100	pCi/g					
Uranium-235	U	ND	+/-0.109	0.213	0.500	pCi/g					
Uranium-238	U	ND	+/-0.819	1.40	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0155	0.0378	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0507	0.0862	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0394	0.0783	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-9
Sample ID: 50722044

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-5	Project:	RNSC00199
Sample ID:	50722045	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.44	+/-0.490	0.196	0.800	pCi/g		CRB	11/08/01	1316	118048	1
Americium-241	U	ND	+/-0.212	0.356	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0392	0.076	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0793	0.136	0.200	pCi/g						
Barium-133	U	ND	+/-0.0382	0.0593	0.100	pCi/g						
Barium-140	U	ND	+/-0.657	1.17	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.373	0.652	0.700	pCi/g						
Bismuth-212		1.73	+/-0.539	0.363	0.500	pCi/g						
Bismuth-214		1.89	+/-0.264	0.0957	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0308	0.0522	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0928	0.166	0.100	pCi/g						
Cerium-144	U	ND	+/-0.197	0.350	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0305	0.0496	0.100	pCi/g						
Cesium-136	U	ND	+/-0.226	0.415	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0334	0.0525	0.100	pCi/g						
Chromium-51	U	ND	+/-0.508	0.937	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0343	0.0629	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0256	0.045	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0391	0.0616	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0328	0.0632	0.100	pCi/g						
Europium-152	U	ND	+/-0.086	0.160	0.200	pCi/g						
Europium-154	U	ND	+/-0.0881	0.151	0.500	pCi/g						
Europium-155	U	ND	+/-0.153	0.186	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0351	0.067	0.100	pCi/g						
Iron-59	U	ND	+/-0.0805	0.150	0.300	pCi/g						
Lead-210	U	ND	+/-7.79	13.0	4.00	pCi/g						
Lead-212		2.67	+/-0.325	0.0904	0.100	pCi/g						
Lead-214		2.12	+/-0.292	0.107	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0316	0.0517	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0827	0.0757	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.81	3.03	1000	pCi/g						
Neptunium-239	U	ND	+/-0.180	0.326	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0306	0.0566	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0723	0.117	0.050	pCi/g						
Potassium-40		0.768	+/-0.598	0.609	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0312	0.0539	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0345	0.0627	1.00	pCi/g						
Radium-228		2.44	+/-0.490	0.196	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.278	0.465	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-5 Project: RNSC00199
Sample ID: 50722045 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0296	0.0533	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0319	0.0546	0.080	pCi/g					
Thallium-208		0.791	+/-0.128	0.0583	0.080	pCi/g					
Thorium-230		1.89	+/-0.264	0.0957	1.00	pCi/g					
Thorium-234	U	ND	+/-2.32	2.82	2.00	pCi/g					
Tin-113	U	ND	+/-0.043	0.0784	0.100	pCi/g					
Uranium-235	U	ND	+/-0.202	0.355	0.500	pCi/g					
Uranium-238	U	ND	+/-2.32	2.82	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0303	0.0651	0.100	pCi/g					
Zinc-65	U	ND	+/-0.062	0.093	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0759	0.134	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-5
Sample ID: 50722045

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-12	Project:	RNSC00199
Sample ID:	50722046	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.838	+/-0.216	0.121	0.800	pCi/g		CRB	11/08/01	1317	118048	1
Americium-241	U	ND	+/-0.143	0.256	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0298	0.0631	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0588	0.114	0.200	pCi/g						
Barium-133	U	ND	+/-0.0301	0.050	0.100	pCi/g						
Barium-140	U	ND	+/-0.546	1.07	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.290	0.562	0.700	pCi/g						
Bismuth-212		0.372	+/-0.320	0.311	0.500	pCi/g						
Bismuth-214	U	ND	+/-0.127	0.207	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0211	0.0366	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0624	0.119	0.100	pCi/g						
Cerium-144	U	ND	+/-0.191	0.219	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0237	0.0374	0.100	pCi/g						
Cesium-136	U	ND	+/-0.170	0.339	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0257	0.051	0.100	pCi/g						
Chromium-51	U	ND	+/-0.380	0.658	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0295	0.0488	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0151	0.0285	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0305	0.0607	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0255	0.045	0.100	pCi/g						
Europium-152	U	ND	+/-0.0732	0.110	0.200	pCi/g						
Europium-154	U	ND	+/-0.0703	0.114	0.500	pCi/g						
Europium-155	U	ND	+/-0.0671	0.131	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0277	0.0494	0.100	pCi/g						
Iron-59	U	ND	+/-0.0683	0.133	0.300	pCi/g						
Lead-210	U	ND	+/-5.39	10.1	4.00	pCi/g						
Lead-212		0.790	+/-0.126	0.0585	0.100	pCi/g						
Lead-214		0.763	+/-0.148	0.0841	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0242	0.0403	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0528	0.0604	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.25	2.45	1000	pCi/g						
Neptunium-239	U	ND	+/-0.114	0.223	2.00	pCi/g						
Niobium-94	U	ND	+/-0.019	0.0364	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0495	0.0964	0.050	pCi/g						
Potassium-40		0.795	+/-0.544	0.439	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0231	0.0431	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0258	0.0477	1.00	pCi/g						
Radium-228		0.838	+/-0.216	0.121	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.197	0.340	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-12
Sample ID: 50722046

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0239	0.0445	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0254	0.0413	0.080	pCi/g					
Thallium-208		0.245	+/-0.0569	0.0388	0.080	pCi/g					
Thorium-230		0.663	+/-0.127	0.0729	1.00	pCi/g					
Thorium-234	U	ND	+/-1.04	1.85	2.00	pCi/g					
Tin-113	U	ND	+/-0.0341	0.0533	0.100	pCi/g					
Uranium-235	U	ND	+/-0.135	0.250	0.500	pCi/g					
Uranium-238	U	ND	+/-1.04	1.85	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.035	0.0649	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0464	0.0786	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0504	0.0968	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-12
Sample ID: 50722046

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-13	Project:	RNSC00199
Sample ID:	50722047	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.468	+/-0.157	0.104	0.800	pCi/g		CRB	11/08/01	1517	118048	1
Americium-241	U	ND	+/-0.0926	0.160	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0248	0.0473	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0495	0.0902	0.200	pCi/g						
Barium-133	U	ND	+/-0.0238	0.0412	0.100	pCi/g						
Barium-140	U	ND	+/-0.423	0.760	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.210	0.390	0.700	pCi/g						
Bismuth-212	U	ND	+/-0.195	0.269	0.500	pCi/g						
Bismuth-214		0.425	+/-0.102	0.0696	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0173	0.0328	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0539	0.0994	0.100	pCi/g						
Cerium-144	U	ND	+/-0.113	0.212	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0204	0.0294	0.100	pCi/g						
Cesium-136	U	ND	+/-0.170	0.320	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0221	0.0404	0.100	pCi/g						
Chromium-51	U	ND	+/-0.297	0.567	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.024	0.0462	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.014	0.0269	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.021	0.042	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0189	0.0358	0.100	pCi/g						
Europium-152	U	ND	+/-0.0466	0.085	0.200	pCi/g						
Europium-154	U	ND	+/-0.063	0.106	0.500	pCi/g						
Europium-155	U	ND	+/-0.0562	0.0983	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0217	0.0424	0.100	pCi/g						
Iron-59	U	ND	+/-0.0651	0.126	0.300	pCi/g						
Lead-210	U	ND	+/-2.69	4.95	4.00	pCi/g						
Lead-212		0.479	+/-0.086	0.0567	0.100	pCi/g						
Lead-214		0.426	+/-0.118	0.0605	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0224	0.0425	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0528	0.0527	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.17	1.90	1000	pCi/g						
Neptunium-239	U	ND	+/-0.0989	0.168	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0183	0.0375	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0676	0.064	0.050	pCi/g						
Potassium-40		0.779	+/-0.521	0.428	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0229	0.0365	0.080	pCi/g						
Promethium-146	U	ND	+/-0.021	0.0381	1.00	pCi/g						
Radium-228		0.468	+/-0.157	0.104	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.175	0.339	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-13
Sample ID: 50722047

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0219	0.0342	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0228	0.0383	0.080	pCi/g					
Thallium-208		0.134	+/-0.0359	0.0352	0.080	pCi/g					
Thorium-230		0.425	+/-0.102	0.0696	1.00	pCi/g					
Thorium-234	U	ND	+/-1.12	1.28	2.00	pCi/g					
Tin-113	U	ND	+/-0.0339	0.0565	0.100	pCi/g					
Uranium-235	U	ND	+/-0.120	0.230	0.500	pCi/g					
Uranium-238	U	ND	+/-1.12	1.28	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0244	0.059	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0512	0.091	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0473	0.0867	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-13
Sample ID: 50722047

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	WM-11	Project:	RNSC00199
Sample ID:	50722048	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.950	+/-0.261	0.145	0.800	pCi/g		CRB	11/08/01	1518	118048	1
Americium-241	U	ND	+/-0.0977	0.172	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0369	0.0624	0.100	pCi/g						
Antimony-125	U	ND	+/-0.061	0.110	0.200	pCi/g						
Barium-133	U	ND	+/-0.0287	0.0487	0.100	pCi/g						
Barium-140	U	ND	+/-0.509	0.901	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.261	0.482	0.700	pCi/g						
Bismuth-212		0.650	+/-0.300	0.294	0.500	pCi/g						
Bismuth-214		0.764	+/-0.139	0.0814	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0213	0.0378	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0906	0.104	0.100	pCi/g						
Cerium-144	U	ND	+/-0.139	0.255	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0208	0.0427	0.100	pCi/g						
Cesium-136	U	ND	+/-0.156	0.265	0.300	pCi/g						
Cesium-137	U	ND	+/-0.024	0.0441	0.100	pCi/g						
Chromium-51	U	ND	+/-0.382	0.686	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0308	0.0511	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0165	0.0306	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0266	0.050	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0218	0.0452	0.100	pCi/g						
Europium-152	U	ND	+/-0.0581	0.109	0.200	pCi/g						
Europium-154	U	ND	+/-0.056	0.115	0.500	pCi/g						
Europium-155	U	ND	+/-0.0674	0.133	0.500	pCi/g						
Iridium-192	U	ND	+/-0.026	0.0491	0.100	pCi/g						
Iron-59	U	ND	+/-0.0648	0.117	0.300	pCi/g						
Lead-210	U	ND	+/-3.81	3.74	4.00	pCi/g						
Lead-212		1.01	+/-0.142	0.0672	0.100	pCi/g						
Lead-214		0.753	+/-0.144	0.0787	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0234	0.0452	0.100	pCi/g						
Mercury-203	U	ND	+/-0.078	0.0611	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.28	2.19	1000	pCi/g						
Neptunium-239	U	ND	+/-0.118	0.225	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0207	0.0335	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0784	0.0913	0.050	pCi/g						
Potassium-40	U	ND	+/-0.396	0.371	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0214	0.0427	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0279	0.0536	1.00	pCi/g						
Radium-228		0.950	+/-0.261	0.145	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.202	0.382	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-11
Sample ID: 50722048

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0211	0.0404	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0203	0.0416	0.080	pCi/g					
Thallium-208		0.288	+/-0.0664	0.0366	0.080	pCi/g					
Thorium-230		0.764	+/-0.139	0.0814	1.00	pCi/g					
Thorium-234		1.99	+/-1.98	1.40	2.00	pCi/g					
Tin-113	U	ND	+/-0.0315	0.0573	0.100	pCi/g					
Uranium-235	U	ND	+/-0.235	0.260	0.500	pCi/g					
Uranium-238		1.99	+/-1.98	1.40	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.026	0.048	0.100	pCi/g					
Zinc-65	U	ND	+/-0.056	0.110	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0564	0.107	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM-11
Sample ID: 50722048

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	Chain of Custody #3142095	Project:	RNSC00199
Sample ID:	50722049	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		5.63	+/-0.942	0.238	0.800	pCi/g		CRB	11/08/01	1519	118048	1
Americium-241	U	ND	+/-0.0566	0.0979	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0476	0.0878	0.100	pCi/g						
Antimony-125	U	ND	+/-0.105	0.185	0.200	pCi/g						
Barium-133	U	ND	+/-0.052	0.0785	0.100	pCi/g						
Barium-140	U	ND	+/-0.806	1.48	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.451	0.798	0.700	pCi/g						
Bismuth-212		3.76	+/-0.844	0.560	0.500	pCi/g						
Bismuth-214		4.64	+/-0.619	0.123	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0346	0.0637	0.050	pCi/g						
Cerium-141	U	ND	+/-0.133	0.175	0.100	pCi/g						
Cerium-144	U	ND	+/-0.209	0.397	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0376	0.0588	0.100	pCi/g						
Cesium-136	U	ND	+/-0.306	0.562	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0458	0.0736	0.100	pCi/g						
Chromium-51	U	ND	+/-0.663	1.17	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.057	0.0834	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0276	0.0487	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0583	0.0832	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0362	0.0662	0.100	pCi/g						
Europium-152	U	ND	+/-0.102	0.168	0.200	pCi/g						
Europium-154	U	ND	+/-0.108	0.208	0.500	pCi/g						
Europium-155	U	ND	+/-0.160	0.168	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0446	0.0764	0.100	pCi/g						
Iron-59	U	ND	+/-0.122	0.197	0.300	pCi/g						
Lead-210		3.02	+/-1.06	0.801	4.00	pCi/g						
Lead-212		6.13	+/-0.920	0.118	0.100	pCi/g						
Lead-214		5.50	+/-0.745	0.136	0.100	pCi/g						
Manganese-54	U	ND	+/-0.067	0.0864	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0887	0.113	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.21	4.04	1000	pCi/g						
Neptunium-239	U	ND	+/-0.263	0.338	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0526	0.0702	1.00	pCi/g						
Niobium-95	U	ND	+/-0.100	0.164	0.050	pCi/g						
Potassium-40		1.41	+/-0.971	0.685	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0394	0.0711	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0497	0.0892	1.00	pCi/g						
Radium-228		5.63	+/-0.942	0.238	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.346	0.628	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: Chain of Custody #3142095 Project: RNSC00199
Sample ID: 50722049 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0404	0.0724	0.080	pCi/g					
Sodium-22	U	ND	+/-0.039	0.0751	0.080	pCi/g					
Thallium-208		1.85	+/-0.247	0.0654	0.080	pCi/g					
Thorium-230		4.64	+/-0.619	0.123	1.00	pCi/g					
Thorium-234		4.71	+/-1.49	1.05	2.00	pCi/g					
Tin-113	U	ND	+/-0.0578	0.0989	0.100	pCi/g					
Uranium-235	U	ND	+/-0.323	0.423	0.500	pCi/g					
Uranium-238		4.71	+/-1.49	1.05	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0477	0.0893	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0916	0.148	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.116	0.194	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: Chain of Custody #3142095 Project: RNSC00199
Sample ID: 50722049 Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-17	Project:	RNSC00199
Sample ID:	50722050	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.683	+/-0.203	0.116	0.800	pCi/g		CRB	11/08/01	1318	118048	1
Americium-241	U	ND	+/-0.0985	0.182	0.200	pCi/g						
Antimony-124	U	ND	+/-0.026	0.0537	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0534	0.100	0.200	pCi/g						
Barium-133	U	ND	+/-0.0248	0.0441	0.100	pCi/g						
Barium-140	U	ND	+/-0.449	0.846	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.249	0.428	0.700	pCi/g						
Bismuth-212		0.501	+/-0.244	0.294	0.500	pCi/g						
Bismuth-214	U	ND	+/-0.105	0.182	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0187	0.0359	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0571	0.109	0.100	pCi/g						
Cerium-144	U	ND	+/-0.127	0.225	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0212	0.0353	0.100	pCi/g						
Cesium-136	U	ND	+/-0.165	0.333	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0208	0.0401	0.100	pCi/g						
Chromium-51	U	ND	+/-0.346	0.673	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0245	0.0471	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0156	0.0287	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0179	0.0416	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0211	0.0468	0.100	pCi/g						
Europium-152	U	ND	+/-0.0692	0.109	0.200	pCi/g						
Europium-154	U	ND	+/-0.0583	0.122	0.500	pCi/g						
Europium-155	U	ND	+/-0.0579	0.115	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0243	0.0434	0.100	pCi/g						
Iron-59	U	ND	+/-0.0573	0.116	0.300	pCi/g						
Lead-210	U	ND	+/-2.70	4.35	4.00	pCi/g						
Lead-212		0.665	+/-0.121	0.0786	0.100	pCi/g						
Lead-214		0.626	+/-0.123	0.0683	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0256	0.0455	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0324	0.0555	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.14	2.19	1000	pCi/g						
Neptunium-239	U	ND	+/-0.107	0.201	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0161	0.0338	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0476	0.0743	0.050	pCi/g						
Potassium-40		1.95	+/-0.570	0.350	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0185	0.0383	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0275	0.048	1.00	pCi/g						
Radium-228		0.683	+/-0.203	0.116	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.199	0.390	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-17
Sample ID: 50722050

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0204	0.0399	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0211	0.044	0.080	pCi/g					
Thallium-208		0.224	+/-0.0686	0.0363	0.080	pCi/g					
Thorium-230		0.485	+/-0.105	0.0695	1.00	pCi/g					
Thorium-234	U	ND	+/-1.30	1.37	2.00	pCi/g					
Tin-113	U	ND	+/-0.0298	0.0546	0.100	pCi/g					
Uranium-235	U	ND	+/-0.126	0.242	0.500	pCi/g					
Uranium-238	U	ND	+/-1.30	1.37	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0199	0.0351	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0495	0.0822	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0564	0.0889	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-17
Sample ID: 50722050

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-13	Project:	RNSC00199
Sample ID:	50722051	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.69	+/-0.420	0.250	0.800	pCi/g		CRB	11/08/01	1519	118048	1
Americium-241	U	ND	+/-0.0669	0.114	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0493	0.0858	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0949	0.172	0.200	pCi/g						
Barium-133	U	ND	+/-0.0489	0.0834	0.100	pCi/g						
Barium-140	U	ND	+/-0.767	1.35	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.409	0.739	0.700	pCi/g						
Bismuth-212		1.05	+/-0.585	0.554	0.500	pCi/g						
Bismuth-214		1.59	+/-0.285	0.115	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0305	0.0546	0.050	pCi/g						
Cerium-141	U	ND	+/-0.136	0.159	0.100	pCi/g						
Cerium-144	U	ND	+/-0.231	0.369	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0386	0.0578	0.100	pCi/g						
Cesium-136	U	ND	+/-0.275	0.471	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0374	0.0702	0.100	pCi/g						
Chromium-51	U	ND	+/-0.590	1.07	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.042	0.0777	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0234	0.0444	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0441	0.0792	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0264	0.0674	0.100	pCi/g						
Europium-152	U	ND	+/-0.105	0.173	0.200	pCi/g						
Europium-154	U	ND	+/-0.0701	0.166	0.500	pCi/g						
Europium-155	U	ND	+/-0.0938	0.179	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0399	0.0704	0.100	pCi/g						
Iron-59	U	ND	+/-0.0877	0.154	0.300	pCi/g						
Lead-210		1.97	+/-1.34	0.897	4.00	pCi/g						
Lead-212		2.22	+/-0.317	0.0919	0.100	pCi/g						
Lead-214		1.71	+/-0.285	0.119	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0393	0.0769	0.100	pCi/g						
Mercury-203	U	ND	+/-0.090	0.0915	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.00	3.80	1000	pCi/g						
Neptunium-239	U	ND	+/-0.166	0.306	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0329	0.062	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0759	0.131	0.050	pCi/g						
Potassium-40	U	ND	+/-0.440	0.949	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0354	0.064	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0425	0.0812	1.00	pCi/g						
Radium-228		1.69	+/-0.420	0.250	0.500	pCi/g						
Ruthenium-106	U	ND	+/-1.16	0.554	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-13
Sample ID: 50722051

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0356	0.0605	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0253	0.0662	0.080	pCi/g					
Thallium-208		0.657	+/-0.133	0.0669	0.080	pCi/g					
Thorium-230		1.59	+/-0.284	0.115	1.00	pCi/g					
Thorium-234		1.13	+/-1.13	1.09	2.00	pCi/g					
Tin-113	U	ND	+/-0.0483	0.0824	0.100	pCi/g					
Uranium-235	U	ND	+/-0.370	0.376	0.500	pCi/g					
Uranium-238		1.13	+/-1.13	1.09	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0348	0.0735	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0741	0.121	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.104	0.167	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-13
Sample ID: 50722051

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-14	Project:	RNSC00199
Sample ID:	50722052	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		15.2	+/-2.30	0.369	0.800	pCi/g		CRB	11/08/01	1520	118048	1
Americium-241	U	ND	+/-0.282	0.546	0.200	pCi/g						
Antimony-124	U	ND	+/-0.087	0.152	0.100	pCi/g						
Antimony-125	U	ND	+/-0.173	0.315	0.200	pCi/g						
Barium-133	U	ND	+/-0.411	0.148	0.100	pCi/g						
Barium-140	U	ND	+/-1.66	2.60	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.812	1.49	0.700	pCi/g						
Bismuth-212		9.05	+/-1.54	0.948	0.500	pCi/g						
Bismuth-214		9.64	+/-1.12	0.208	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0748	0.122	0.050	pCi/g						
Cerium-141	U	ND	+/-0.220	0.363	0.100	pCi/g						
Cerium-144	U	ND	+/-0.436	0.787	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0684	0.103	0.100	pCi/g						
Cesium-136	U	ND	+/-0.441	0.750	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0775	0.118	0.100	pCi/g						
Chromium-51	U	ND	+/-1.20	2.19	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0761	0.129	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0532	0.0985	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0871	0.136	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0604	0.106	0.100	pCi/g						
Europium-152	U	ND	+/-0.185	0.324	0.200	pCi/g						
Europium-154	U	ND	+/-0.173	0.287	0.500	pCi/g						
Europium-155	U	ND	+/-0.358	0.377	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0794	0.149	0.100	pCi/g						
Iron-59	U	ND	+/-0.158	0.316	0.300	pCi/g						
Lead-210	U	ND	+/-12.6	13.8	4.00	pCi/g						
Lead-212		16.6	+/-1.92	0.209	0.100	pCi/g						
Lead-214		11.1	+/-1.37	0.239	0.100	pCi/g						
Manganese-54	U	ND	+/-0.098	0.137	0.100	pCi/g						
Mercury-203	U	ND	+/-0.184	0.185	0.100	pCi/g						
Neodymium-147	U	ND	+/-4.46	6.99	1000	pCi/g						
Neptunium-239	U	ND	+/-0.367	0.671	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0669	0.117	1.00	pCi/g						
Niobium-95	U	ND	+/-0.165	0.266	0.050	pCi/g						
Potassium-40		2.27	+/-0.984	0.908	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0648	0.112	0.080	pCi/g						
Promethium-146	U	ND	+/-0.083	0.152	1.00	pCi/g						
Radium-228		15.2	+/-2.30	0.369	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.602	1.08	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-14
Sample ID: 50722052

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0669	0.117	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0625	0.104	0.080	pCi/g					
Thallium-208		5.05	+/-0.573	0.124	0.080	pCi/g					
Thorium-230		9.64	+/-1.12	0.208	1.00	pCi/g					
Thorium-234		9.02	+/-4.73	4.34	2.00	pCi/g					
Tin-113	U	ND	+/-0.0967	0.176	0.100	pCi/g					
Uranium-235	U	ND	+/-0.573	0.792	0.500	pCi/g					
Uranium-238		9.02	+/-4.73	4.34	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0645	0.117	0.100	pCi/g					
Zinc-65	U	ND	+/-0.184	0.213	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.257	0.317	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
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B Analyte found in the sample as well as the associated blank.
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-14
Sample ID: 50722052

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-15
Sample ID: 50722053
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		10.5	+/-0.655	0.347	0.800	pCi/g		CRB	11/08/01	1521	118048	1
Americium-241	U	ND	+/-0.0983	0.171	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0854	0.145	0.100	pCi/g						
Antimony-125	U	ND	+/-0.151	0.273	0.200	pCi/g						
Barium-133	U	ND	+/-0.0775	0.123	0.100	pCi/g						
Barium-140	U	ND	+/-1.45	2.54	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.712	1.27	0.700	pCi/g						
Bismuth-212		7.83	+/-1.04	0.805	0.500	pCi/g						
Bismuth-214		6.29	+/-0.318	0.183	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0561	0.101	0.050	pCi/g						
Cerium-141	U	ND	+/-0.346	0.288	0.100	pCi/g						
Cerium-144	U	ND	+/-0.351	0.632	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0631	0.101	0.100	pCi/g						
Cesium-136	U	ND	+/-0.438	0.731	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0664	0.107	0.100	pCi/g						
Chromium-51	U	ND	+/-0.981	1.76	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.077	0.123	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0419	0.0767	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0848	0.126	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0551	0.0968	0.100	pCi/g						
Europium-152	U	ND	+/-0.158	0.275	0.200	pCi/g						
Europium-154	U	ND	+/-0.176	0.281	0.500	pCi/g						
Europium-155	U	ND	+/-0.236	0.279	0.500	pCi/g						
Iridium-192	U	ND	+/-0.113	0.126	0.100	pCi/g						
Iron-59	U	ND	+/-0.172	0.294	0.300	pCi/g						
Lead-210		4.30	+/-1.53	1.29	4.00	pCi/g						
Lead-212		11.6	+/-0.289	0.166	0.100	pCi/g						
Lead-214		7.23	+/-0.334	0.199	0.100	pCi/g						
Manganese-54	U	ND	+/-0.245	0.116	0.100	pCi/g						
Mercury-203	U	ND	+/-0.150	0.175	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.71	6.17	1000	pCi/g						
Neptunium-239	U	ND	+/-0.439	0.537	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0609	0.105	1.00	pCi/g						
Niobium-95	U	ND	+/-0.138	0.262	0.050	pCi/g						
Potassium-40		3.65	+/-0.977	0.960	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0651	0.113	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0769	0.142	1.00	pCi/g						
Radium-228		10.5	+/-0.655	0.347	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.534	0.899	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-15
Sample ID: 50722053

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.062	0.110	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0638	0.102	0.080	pCi/g					
Thallium-208		3.68	+/-0.188	0.108	0.080	pCi/g					
Thorium-230		6.29	+/-0.318	0.183	1.00	pCi/g					
Thorium-234		6.84	+/-1.81	1.71	2.00	pCi/g					
Tin-113	U	ND	+/-0.103	0.150	0.100	pCi/g					
Uranium-235	U	ND	+/-0.841	0.644	0.500	pCi/g					
Uranium-238		6.84	+/-1.81	1.71	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0595	0.117	0.100	pCi/g					
Zinc-65	U	ND	+/-0.142	0.232	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.340	0.288	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-15
Sample ID: 50722053

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-16
Sample ID: 50722054
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Actinium-228		2.01	+/-0.295	0.182	0.800	pCi/g		CRB 11/08/01	1543	118048	1
Americium-241	U	ND	+/-0.182	0.305	0.200	pCi/g					
Antimony-124	U	ND	+/-0.0492	0.080	0.100	pCi/g					
Antimony-125	U	ND	+/-0.0778	0.147	0.200	pCi/g					
Barium-133	U	ND	+/-0.0446	0.0786	0.100	pCi/g					
Barium-140	U	ND	+/-0.620	1.17	0.500	pCi/g					
Beryllium-7	U	ND	+/-0.369	0.638	0.700	pCi/g					
Bismuth-212		1.47	+/-0.634	0.462	0.500	pCi/g					
Bismuth-214		0.914	+/-0.172	0.108	0.200	pCi/g					
Cerium-139	U	ND	+/-0.0294	0.0529	0.050	pCi/g					
Cerium-141	U	ND	+/-0.0865	0.161	0.100	pCi/g					
Cerium-144	U	ND	+/-0.208	0.344	0.500	pCi/g					
Cesium-134	U	ND	+/-0.0336	0.054	0.100	pCi/g					
Cesium-136	U	ND	+/-0.207	0.369	0.300	pCi/g					
Cesium-137	U	ND	+/-0.0316	0.060	0.100	pCi/g					
Chromium-51	U	ND	+/-0.538	0.925	0.600	pCi/g					
Cobalt-56	U	ND	+/-0.0346	0.0589	0.100	pCi/g					
Cobalt-57	U	ND	+/-0.0236	0.0438	0.050	pCi/g					
Cobalt-58	U	ND	+/-0.0356	0.0671	0.100	pCi/g					
Cobalt-60	U	ND	+/-0.0384	0.0574	0.100	pCi/g					
Europium-152	U	ND	+/-0.0916	0.143	0.200	pCi/g					
Europium-154	U	ND	+/-0.0818	0.152	0.500	pCi/g					
Europium-155	U	ND	+/-0.0999	0.183	0.500	pCi/g					
Iridium-192	U	ND	+/-0.0356	0.0663	0.100	pCi/g					
Iron-59	U	ND	+/-0.0741	0.141	0.300	pCi/g					
Lead-210	U	ND	+/-5.79	10.0	4.00	pCi/g					
Lead-212		2.68	+/-0.216	0.091	0.100	pCi/g					
Lead-214		1.32	+/-0.182	0.0984	0.100	pCi/g					
Manganese-54	U	ND	+/-0.0309	0.0565	0.100	pCi/g					
Mercury-203	U	ND	+/-0.0524	0.101	0.100	pCi/g					
Neodymium-147	U	ND	+/-1.64	2.84	1000	pCi/g					
Neptunium-239	U	ND	+/-0.169	0.323	2.00	pCi/g					
Niobium-94	U	ND	+/-0.0312	0.0526	1.00	pCi/g					
Niobium-95	U	ND	+/-0.0629	0.115	0.050	pCi/g					
Potassium-40		1.16	+/-0.843	0.453	1.00	pCi/g					
Promethium-144	U	ND	+/-0.0287	0.054	0.080	pCi/g					
Promethium-146	U	ND	+/-0.0399	0.0705	1.00	pCi/g					
Radium-228		2.01	+/-0.295	0.182	0.500	pCi/g					
Ruthenium-106	U	ND	+/-0.438	0.484	0.800	pCi/g					

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-16 Project: RNSC00199
Sample ID: 50722054 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0299	0.054	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0288	0.0552	0.080	pCi/g					
Thallium-208		0.618	+/-0.0946	0.0625	0.080	pCi/g					
Thorium-230		0.914	+/-0.172	0.108	1.00	pCi/g					
Thorium-234	U	ND	+/-2.22	2.33	2.00	pCi/g					
Tin-113	U	ND	+/-0.0446	0.0771	0.100	pCi/g					
Uranium-235	U	ND	+/-0.188	0.347	0.500	pCi/g					
Uranium-238	U	ND	+/-2.22	2.33	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.035	0.0696	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0725	0.118	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0782	0.150	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-16
Sample ID: 50722054

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-9	Project:	RNSC00199
Sample ID:	50722055	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.838	+/-0.209	0.129	0.800	pCi/g		CRB	11/08/01	1543	118048	1
Americium-241	U	ND	+/-0.181	0.221	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0325	0.0496	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0552	0.102	0.200	pCi/g						
Barium-133	U	ND	+/-0.0298	0.0493	0.100	pCi/g						
Barium-140	U	ND	+/-0.573	0.866	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.252	0.418	0.700	pCi/g						
Bismuth-212		0.551	+/-0.244	0.255	0.500	pCi/g						
Bismuth-214		0.709	+/-0.122	0.0709	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0207	0.0371	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0704	0.111	0.100	pCi/g						
Cerium-144	U	ND	+/-0.126	0.231	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0216	0.0319	0.100	pCi/g						
Cesium-136	U	ND	+/-0.166	0.323	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0234	0.047	0.100	pCi/g						
Chromium-51	U	ND	+/-0.383	0.718	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0255	0.0502	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0164	0.0299	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0254	0.046	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0246	0.0428	0.100	pCi/g						
Europium-152	U	ND	+/-0.062	0.115	0.200	pCi/g						
Europium-154	U	ND	+/-0.0501	0.0897	0.500	pCi/g						
Europium-155	U	ND	+/-0.102	0.121	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0255	0.0474	0.100	pCi/g						
Iron-59	U	ND	+/-0.0609	0.119	0.300	pCi/g						
Lead-210	U	ND	+/-4.84	8.67	4.00	pCi/g						
Lead-212		0.924	+/-0.132	0.0658	0.100	pCi/g						
Lead-214		0.631	+/-0.124	0.0743	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0202	0.0391	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0338	0.0605	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.23	2.36	1000	pCi/g						
Neptunium-239	U	ND	+/-0.116	0.212	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0206	0.0373	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0722	0.077	0.050	pCi/g						
Potassium-40		0.745	+/-0.476	0.354	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0207	0.0373	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0269	0.0494	1.00	pCi/g						
Radium-228		0.838	+/-0.209	0.129	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.170	0.321	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-9
Sample ID: 50722055

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0233	0.0378	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0181	0.0325	0.080	pCi/g					
Thallium-208		0.285	+/-0.0658	0.041	0.080	pCi/g					
Thorium-230		0.709	+/-0.122	0.0709	1.00	pCi/g					
Thorium-234		1.78	+/-1.75	1.75	2.00	pCi/g					
Tin-113	U	ND	+/-0.0291	0.0535	0.100	pCi/g					
Uranium-235	U	ND	+/-0.139	0.251	0.500	pCi/g					
Uranium-238		1.78	+/-1.75	1.75	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0223	0.0455	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0539	0.0942	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0526	0.0967	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-9
Sample ID: 50722055

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-10	Project:	RNSC00199
Sample ID:	50722056	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.92	+/-0.703	0.218	0.800	pCi/g		CRB	11/08/01	1544	118048	1
Americium-241	U	ND	+/-0.242	0.464	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0554	0.0914	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0984	0.182	0.200	pCi/g						
Barium-133	U	ND	+/-0.052	0.0825	0.100	pCi/g						
Barium-140	U	ND	+/-1.48	1.71	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.463	0.863	0.700	pCi/g						
Bismuth-212		2.96	+/-0.752	0.530	0.500	pCi/g						
Bismuth-214		3.52	+/-0.469	0.119	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0395	0.0712	0.050	pCi/g						
Cerium-141	U	ND	+/-0.117	0.215	0.100	pCi/g						
Cerium-144	U	ND	+/-0.280	0.458	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0404	0.063	0.100	pCi/g						
Cesium-136	U	ND	+/-0.277	0.449	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0438	0.0709	0.100	pCi/g						
Chromium-51	U	ND	+/-0.727	1.28	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0441	0.0812	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0358	0.0591	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0448	0.0852	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0373	0.0669	0.100	pCi/g						
Europium-152	U	ND	+/-0.134	0.200	0.200	pCi/g						
Europium-154	U	ND	+/-0.113	0.222	0.500	pCi/g						
Europium-155	U	ND	+/-0.233	0.231	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0483	0.0852	0.100	pCi/g						
Iron-59	U	ND	+/-0.104	0.186	0.300	pCi/g						
Lead-210	U	ND	+/-15.4	19.2	4.00	pCi/g						
Lead-212		4.58	+/-0.567	0.116	0.100	pCi/g						
Lead-214		4.19	+/-0.562	0.130	0.100	pCi/g						
Manganese-54	U	ND	+/-0.042	0.0843	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0738	0.115	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.26	4.06	1000	pCi/g						
Neptunium-239	U	ND	+/-0.225	0.414	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0355	0.0627	1.00	pCi/g						
Niobium-95	U	ND	+/-0.133	0.178	0.050	pCi/g						
Potassium-40	U	ND	+/-0.571	1.09	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0385	0.0684	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0463	0.0887	1.00	pCi/g						
Radium-228		3.92	+/-0.703	0.218	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.333	0.605	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-10
Sample ID: 50722056

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0374	0.0671	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0409	0.0803	0.080	pCi/g					
Thallium-208		1.32	+/-0.185	0.0697	0.080	pCi/g					
Thorium-230		3.52	+/-0.469	0.119	1.00	pCi/g					
Thorium-234		6.24	+/-3.75	3.57	2.00	pCi/g					
Tin-113	U	ND	+/-0.0617	0.102	0.100	pCi/g					
Uranium-235	U	ND	+/-0.253	0.467	0.500	pCi/g					
Uranium-238		6.24	+/-3.75	3.57	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0457	0.0907	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0903	0.140	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.145	0.180	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-10
Sample ID: 50722056

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-11	Project:	RNSC00199
Sample ID:	50722057	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.53	+/-0.468	0.147	0.800	pCi/g		CRB	11/08/01	1544	118048	1
Americium-241	U	ND	+/-0.168	0.272	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0368	0.0692	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0749	0.143	0.200	pCi/g						
Barium-133	U	ND	+/-0.0391	0.0657	0.100	pCi/g						
Barium-140	U	ND	+/-0.655	1.25	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.397	0.672	0.700	pCi/g						
Bismuth-212		1.62	+/-0.479	0.449	0.500	pCi/g						
Bismuth-214		1.96	+/-0.290	0.0922	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0284	0.0512	0.050	pCi/g						
Cerium-141	U	ND	+/-0.114	0.157	0.100	pCi/g						
Cerium-144	U	ND	+/-0.185	0.319	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0287	0.0487	0.100	pCi/g						
Cesium-136	U	ND	+/-0.215	0.348	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0311	0.0555	0.100	pCi/g						
Chromium-51	U	ND	+/-0.543	0.964	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0342	0.0628	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0235	0.0445	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.038	0.0583	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0246	0.0499	0.100	pCi/g						
Europium-152	U	ND	+/-0.0864	0.159	0.200	pCi/g						
Europium-154	U	ND	+/-0.073	0.134	0.500	pCi/g						
Europium-155	U	ND	+/-0.152	0.167	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0371	0.0678	0.100	pCi/g						
Iron-59	U	ND	+/-0.0809	0.164	0.300	pCi/g						
Lead-210	U	ND	+/-4.21	7.05	4.00	pCi/g						
Lead-212		2.64	+/-0.325	0.0917	0.100	pCi/g						
Lead-214		2.04	+/-0.293	0.110	0.100	pCi/g						
Manganese-54	U	ND	+/-0.119	0.0531	0.100	pCi/g						
Mercury-203	U	ND	+/-0.114	0.0825	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.64	2.96	1000	pCi/g						
Neptunium-239	U	ND	+/-0.168	0.316	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0282	0.051	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0638	0.117	0.050	pCi/g						
Potassium-40		1.10	+/-0.520	0.518	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0303	0.0559	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0363	0.0648	1.00	pCi/g						
Radium-228		2.53	+/-0.468	0.147	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.397	0.392	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-11
Sample ID: 50722057

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0288	0.0545	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0264	0.0483	0.080	pCi/g					
Thallium-208		0.840	+/-0.125	0.0588	0.080	pCi/g					
Thorium-230		1.96	+/-0.290	0.0922	1.00	pCi/g					
Thorium-234	U	ND	+/-1.96	2.19	2.00	pCi/g					
Tin-113	U	ND	+/-0.0434	0.0784	0.100	pCi/g					
Uranium-235	U	ND	+/-0.310	0.356	0.500	pCi/g					
Uranium-238	U	ND	+/-1.96	2.19	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0297	0.0676	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0691	0.0921	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.134	0.153	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-11
Sample ID: 50722057

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	Pit	Project:	RNSC00199
Sample ID:	50722058	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Actinium-228		1.51	+/-0.327	0.135	0.800	pCi/g		CRB	11/08/01 1802	118048	1
Americium-241	U	ND	+/-0.123	0.217	0.200	pCi/g					
Antimony-124	U	ND	+/-0.0336	0.0614	0.100	pCi/g					
Antimony-125	U	ND	+/-0.0636	0.116	0.200	pCi/g					
Barium-133	U	ND	+/-0.0352	0.0513	0.100	pCi/g					
Barium-140	U	ND	+/-0.701	1.08	0.500	pCi/g					
Beryllium-7	U	ND	+/-0.328	0.551	0.700	pCi/g					
Bismuth-212		0.991	+/-0.447	0.338	0.500	pCi/g					
Bismuth-214		0.920	+/-0.170	0.084	0.200	pCi/g					
Cerium-139	U	ND	+/-0.0239	0.0426	0.050	pCi/g					
Cerium-141	U	ND	+/-0.0734	0.137	0.100	pCi/g					
Cerium-144	U	ND	+/-0.148	0.282	0.500	pCi/g					
Cesium-134	U	ND	+/-0.0259	0.0442	0.100	pCi/g					
Cesium-136	U	ND	+/-0.187	0.359	0.300	pCi/g					
Cesium-137	U	ND	+/-0.024	0.0475	0.100	pCi/g					
Chromium-51	U	ND	+/-0.442	0.809	0.600	pCi/g					
Cobalt-56	U	ND	+/-0.0328	0.0497	0.100	pCi/g					
Cobalt-57	U	ND	+/-0.0192	0.0355	0.050	pCi/g					
Cobalt-58	U	ND	+/-0.0283	0.0491	0.100	pCi/g					
Cobalt-60	U	ND	+/-0.0236	0.0462	0.100	pCi/g					
Europium-152	U	ND	+/-0.0691	0.125	0.200	pCi/g					
Europium-154	U	ND	+/-0.0793	0.110	0.500	pCi/g					
Europium-155	U	ND	+/-0.152	0.139	0.500	pCi/g					
Iridium-192	U	ND	+/-0.0288	0.0524	0.100	pCi/g					
Iron-59	U	ND	+/-0.0707	0.124	0.300	pCi/g					
Lead-210	U	ND	+/-3.24	5.82	4.00	pCi/g					
Lead-212		2.02	+/-0.254	0.0716	0.100	pCi/g					
Lead-214		0.997	+/-0.177	0.0932	0.100	pCi/g					
Manganese-54	U	ND	+/-0.0351	0.0481	0.100	pCi/g					
Mercury-203	U	ND	+/-0.0435	0.0676	0.100	pCi/g					
Neodymium-147	U	ND	+/-1.45	2.87	1000	pCi/g					
Neptunium-239	U	ND	+/-0.133	0.251	2.00	pCi/g					
Niobium-94	U	ND	+/-0.0259	0.0491	1.00	pCi/g					
Niobium-95	U	ND	+/-0.0538	0.0851	0.050	pCi/g					
Potassium-40		0.889	+/-0.526	0.471	1.00	pCi/g					
Promethium-144	U	ND	+/-0.0247	0.0439	0.080	pCi/g					
Promethium-146	U	ND	+/-0.0354	0.0671	1.00	pCi/g					
Radium-228		1.51	+/-0.327	0.135	0.500	pCi/g					
Ruthenium-106	U	ND	+/-0.223	0.440	0.800	pCi/g					

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: Pit
Sample ID: 50722058

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0243	0.0446	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0287	0.0398	0.080	pCi/g					
Thallium-208		0.608	+/-0.102	0.0443	0.080	pCi/g					
Thorium-230		0.920	+/-0.170	0.084	1.00	pCi/g					
Thorium-234	U	ND	+/-1.68	1.81	2.00	pCi/g					
Tin-113	U	ND	+/-0.0385	0.066	0.100	pCi/g					
Uranium-235	U	ND	+/-0.156	0.298	0.500	pCi/g					
Uranium-238	U	ND	+/-1.68	1.81	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.027	0.0516	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0604	0.0869	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0645	0.119	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: Pit
Sample ID: 50722058

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-8	Project:	RNSC00199
Sample ID:	50722059	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		0.991	+/-0.249	0.135	0.800	pCi/g		CRB	11/08/01	1802	118048	1
Americium-241	U	ND	+/-0.108	0.185	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0326	0.0559	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0549	0.104	0.200	pCi/g						
Barium-133	U	ND	+/-0.029	0.0468	0.100	pCi/g						
Barium-140	U	ND	+/-0.568	1.01	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.271	0.506	0.700	pCi/g						
Bismuth-212		0.538	+/-0.408	0.299	0.500	pCi/g						
Bismuth-214		0.707	+/-0.144	0.076	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0221	0.0398	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0626	0.111	0.100	pCi/g						
Cerium-144	U	ND	+/-0.131	0.242	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0241	0.0408	0.100	pCi/g						
Cesium-136	U	ND	+/-0.153	0.289	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0258	0.039	0.100	pCi/g						
Chromium-51	U	ND	+/-0.391	0.769	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0299	0.0463	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0174	0.0322	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0282	0.0553	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0466	0.0413	0.100	pCi/g						
Europium-152	U	ND	+/-0.0621	0.115	0.200	pCi/g						
Europium-154	U	ND	+/-0.0709	0.117	0.500	pCi/g						
Europium-155	U	ND	+/-0.0678	0.133	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0262	0.0482	0.100	pCi/g						
Iron-59	U	ND	+/-0.063	0.120	0.300	pCi/g						
Lead-210	U	ND	+/-3.01	5.51	4.00	pCi/g						
Lead-212		1.04	+/-0.144	0.065	0.100	pCi/g						
Lead-214		0.860	+/-0.155	0.0845	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0278	0.0498	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0385	0.0668	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.40	2.67	1000	pCi/g						
Neptunium-239	U	ND	+/-0.123	0.224	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0231	0.0389	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0564	0.0989	0.050	pCi/g						
Potassium-40		1.75	+/-0.587	0.411	1.00	pCi/g						
Promethium-144	U	ND	+/-0.024	0.0425	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0289	0.0555	1.00	pCi/g						
Radium-228		0.991	+/-0.249	0.135	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.212	0.377	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-8
Sample ID: 50722059

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0226	0.0461	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0256	0.0424	0.080	pCi/g					
Thallium-208		0.376	+/-0.072	0.0409	0.080	pCi/g					
Thorium-230		0.706	+/-0.144	0.076	1.00	pCi/g					
Thorium-234	U	ND	+/-1.42	1.46	2.00	pCi/g					
Tin-113	U	ND	+/-0.0303	0.0582	0.100	pCi/g					
Uranium-235	U	ND	+/-0.131	0.244	0.500	pCi/g					
Uranium-238	U	ND	+/-1.42	1.46	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0305	0.063	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0574	0.0954	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0527	0.096	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-8
Sample ID: 50722059

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-7	Project:	RNSC00199
Sample ID:	50722060	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.01	+/-0.421	0.207	0.800	pCi/g		CRB	11/08/01	1803	118048	1
Americium-241	U	ND	+/-0.125	0.241	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0402	0.0708	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0791	0.146	0.200	pCi/g						
Barium-133	U	ND	+/-0.0378	0.0604	0.100	pCi/g						
Barium-140	U	ND	+/-0.707	1.27	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.338	0.606	0.700	pCi/g						
Bismuth-212		1.42	+/-0.420	0.398	0.500	pCi/g						
Bismuth-214		1.76	+/-0.261	0.100	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0429	0.0517	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0897	0.165	0.100	pCi/g						
Cerium-144	U	ND	+/-0.192	0.342	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0308	0.0489	0.100	pCi/g						
Cesium-136	U	ND	+/-0.238	0.419	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0307	0.057	0.100	pCi/g						
Chromium-51	U	ND	+/-0.545	0.989	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.041	0.0738	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0238	0.0444	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0407	0.0683	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0272	0.0455	0.100	pCi/g						
Europium-152	U	ND	+/-0.0821	0.151	0.200	pCi/g						
Europium-154	U	ND	+/-0.0841	0.168	0.500	pCi/g						
Europium-155	U	ND	+/-0.132	0.167	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0364	0.0673	0.100	pCi/g						
Iron-59	U	ND	+/-0.100	0.176	0.300	pCi/g						
Lead-210	U	ND	+/-4.59	5.77	4.00	pCi/g						
Lead-212		2.23	+/-0.280	0.0916	0.100	pCi/g						
Lead-214		2.03	+/-0.297	0.101	0.100	pCi/g						
Manganese-54	U	ND	+/-0.037	0.069	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0809	0.0779	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.75	3.06	1000	pCi/g						
Neptunium-239	U	ND	+/-0.162	0.297	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0303	0.0551	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0702	0.125	0.050	pCi/g						
Potassium-40		1.76	+/-0.728	0.495	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0527	0.0545	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0418	0.0686	1.00	pCi/g						
Radium-228		2.01	+/-0.421	0.207	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.267	0.509	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-7
Sample ID: 50722060

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0304	0.055	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0304	0.0607	0.080	pCi/g					
Thallium-208		0.705	+/-0.115	0.054	0.080	pCi/g					
Thorium-230		1.76	+/-0.261	0.100	1.00	pCi/g					
Thorium-234	U	ND	+/-2.04	2.06	2.00	pCi/g					
Tin-113	U	ND	+/-0.043	0.0747	0.100	pCi/g					
Uranium-235	U	ND	+/-0.196	0.359	0.500	pCi/g					
Uranium-238	U	ND	+/-2.04	2.06	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0391	0.0799	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0846	0.124	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0823	0.144	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-7
Sample ID: 50722060

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-6
Sample ID: 50722061
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.94	+/-0.537	0.343	0.800	pCi/g		CRB	11/09/01	1108	118050	1
Americium-241	U	ND	+/-0.217	0.241	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0749	0.120	0.100	pCi/g						
Antimony-125	U	ND	+/-0.134	0.243	0.200	pCi/g						
Barium-133	U	ND	+/-0.0775	0.130	0.100	pCi/g						
Barium-140	U	ND	+/-1.34	2.05	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.595	1.14	0.700	pCi/g						
Bismuth-212	U	ND	+/-1.05	0.737	0.500	pCi/g						
Bismuth-214		1.73	+/-0.370	0.173	0.200	pCi/g						
Cerium-139	U	ND	+/-0.051	0.0871	0.050	pCi/g						
Cerium-141	U	ND	+/-0.147	0.261	0.100	pCi/g						
Cerium-144	U	ND	+/-0.363	0.553	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0544	0.0865	0.100	pCi/g						
Cesium-136	U	ND	+/-0.427	0.788	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0681	0.132	0.100	pCi/g						
Chromium-51	U	ND	+/-0.873	1.55	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0687	0.122	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0374	0.0657	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0801	0.135	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0461	0.0844	0.100	pCi/g						
Europium-152	U	ND	+/-0.148	0.218	0.200	pCi/g						
Europium-154	U	ND	+/-0.146	0.286	0.500	pCi/g						
Europium-155	U	ND	+/-0.154	0.277	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0584	0.110	0.100	pCi/g						
Iron-59	U	ND	+/-0.167	0.341	0.300	pCi/g						
Lead-210	U	ND	+/-1.55	2.54	4.00	pCi/g						
Lead-212		1.79	+/-0.352	0.138	0.100	pCi/g						
Lead-214		1.92	+/-0.403	0.167	0.100	pCi/g						
Manganese-54	U	ND	+/-0.059	0.0961	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0752	0.141	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.80	5.98	1000	pCi/g						
Neptunium-239	U	ND	+/-0.270	0.472	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0515	0.0895	1.00	pCi/g						
Niobium-95	U	ND	+/-0.125	0.209	0.050	pCi/g						
Potassium-40	U	ND	+/-0.825	0.858	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0562	0.105	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0602	0.111	1.00	pCi/g						
Radium-228		1.94	+/-0.537	0.343	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.483	0.850	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-6 Project: RNSC00199
Sample ID: 50722061 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0646	0.108	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0526	0.103	0.080	pCi/g					
Thallium-208		0.474	+/-0.172	0.104	0.080	pCi/g					
Thorium-230		1.73	+/-0.370	0.173	1.00	pCi/g					
Thorium-234	U	ND	+/-2.22	2.27	2.00	pCi/g					
Tin-113	U	ND	+/-0.0766	0.139	0.100	pCi/g					
Uranium-235	U	ND	+/-0.313	0.559	0.500	pCi/g					
Uranium-238	U	ND	+/-2.22	2.27	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.064	0.102	0.100	pCi/g					
Zinc-65	U	ND	+/-0.123	0.225	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.133	0.243	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-6
Sample ID: 50722061

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-2
Sample ID: 50722062
Matrix: Soil
Collect Date: 03-OCT-01
Receive Date: 17-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		2.39	+/-0.439	0.127	0.800	pCi/g		CRB	11/09/01	0908	118050	1
Americium-241	U	ND	+/-0.097	0.165	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0394	0.0571	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0573	0.105	0.200	pCi/g						
Barium-133	U	ND	+/-0.0311	0.0465	0.100	pCi/g						
Barium-140	U	ND	+/-0.544	0.957	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.283	0.498	0.700	pCi/g						
Bismuth-212		1.17	+/-0.471	0.289	0.500	pCi/g						
Bismuth-214		1.63	+/-0.248	0.0785	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0246	0.044	0.050	pCi/g						
Cerium-141	U	ND	+/-0.115	0.129	0.100	pCi/g						
Cerium-144	U	ND	+/-0.159	0.272	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0253	0.0394	0.100	pCi/g						
Cesium-136	U	ND	+/-0.187	0.339	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0286	0.0429	0.100	pCi/g						
Chromium-51	U	ND	+/-0.404	0.737	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0282	0.0498	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.019	0.0343	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0288	0.0493	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0208	0.038	0.100	pCi/g						
Europium-152	U	ND	+/-0.0643	0.114	0.200	pCi/g						
Europium-154	U	ND	+/-0.0698	0.109	0.500	pCi/g						
Europium-155	U	ND	+/-0.128	0.133	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0273	0.0487	0.100	pCi/g						
Iron-59	U	ND	+/-0.0672	0.112	0.300	pCi/g						
Lead-210	U	ND	+/-1.95	3.16	4.00	pCi/g						
Lead-212		2.43	+/-0.282	0.0693	0.100	pCi/g						
Lead-214		2.07	+/-0.274	0.0795	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0267	0.0456	0.100	pCi/g						
Mercury-203	U	ND	+/-0.068	0.0648	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.32	2.18	1000	pCi/g						
Neptunium-239	U	ND	+/-0.137	0.250	2.00	pCi/g						
Niobium-94	U	ND	+/-0.021	0.0389	1.00	pCi/g						
Niobium-95	U	ND	+/-0.060	0.101	0.050	pCi/g						
Potassium-40	U	ND	+/-0.550	0.400	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0211	0.0381	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0289	0.0532	1.00	pCi/g						
Radium-228		2.39	+/-0.439	0.127	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.198	0.370	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-2 Project: RNSC00199
Sample ID: 50722062 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0257	0.0416	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0248	0.0395	0.080	pCi/g					
Thallium-208		0.684	+/-0.101	0.0402	0.080	pCi/g					
Thorium-230		1.63	+/-0.248	0.0784	1.00	pCi/g					
Thorium-234		1.95	+/-1.52	1.41	2.00	pCi/g					
Tin-113	U	ND	+/-0.0331	0.0595	0.100	pCi/g					
Uranium-235		0.347	+/-0.313	0.298	0.500	pCi/g					
Uranium-238		1.95	+/-1.52	1.41	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0252	0.0508	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0623	0.103	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0713	0.110	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-2
Sample ID: 50722062

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-3	Project:	RNSC00199
Sample ID:	50722063	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.95	+/-0.378	0.167	0.800	pCi/g		CRB	11/09/01	1117	118050	1
Americium-241	U	ND	+/-0.176	0.203	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0355	0.071	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0671	0.129	0.200	pCi/g						
Barium-133	U	ND	+/-0.0375	0.0631	0.100	pCi/g						
Barium-140	U	ND	+/-0.595	1.09	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.309	0.578	0.700	pCi/g						
Bismuth-212		1.57	+/-0.549	0.360	0.500	pCi/g						
Bismuth-214		1.38	+/-0.218	0.0884	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0271	0.0492	0.050	pCi/g						
Cerium-141	U	ND	+/-0.081	0.148	0.100	pCi/g						
Cerium-144	U	ND	+/-0.172	0.315	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0241	0.0471	0.100	pCi/g						
Cesium-136	U	ND	+/-0.211	0.373	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0241	0.052	0.100	pCi/g						
Chromium-51	U	ND	+/-0.485	0.855	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0323	0.0512	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0199	0.0372	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0385	0.0643	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.025	0.0488	0.100	pCi/g						
Europium-152	U	ND	+/-0.0724	0.128	0.200	pCi/g						
Europium-154	U	ND	+/-0.0818	0.159	0.500	pCi/g						
Europium-155	U	ND	+/-0.0836	0.162	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0314	0.0541	0.100	pCi/g						
Iron-59	U	ND	+/-0.0819	0.159	0.300	pCi/g						
Lead-210	U	ND	+/-3.68	5.51	4.00	pCi/g						
Lead-212		2.00	+/-0.246	0.083	0.100	pCi/g						
Lead-214		1.56	+/-0.243	0.101	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0346	0.0463	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0521	0.0771	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.56	2.70	1000	pCi/g						
Neptunium-239	U	ND	+/-0.139	0.259	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0247	0.0434	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0668	0.105	0.050	pCi/g						
Potassium-40		2.17	+/-0.570	0.357	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0266	0.0507	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0345	0.0585	1.00	pCi/g						
Radium-228		1.95	+/-0.378	0.167	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.260	0.439	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-3
Sample ID: 50722063

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0301	0.0509	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0296	0.0574	0.080	pCi/g					
Thallium-208		0.630	+/-0.103	0.0503	0.080	pCi/g					
Thorium-230		1.38	+/-0.218	0.0884	1.00	pCi/g					
Thorium-234		1.90	+/-1.73	1.75	2.00	pCi/g					
Tin-113	U	ND	+/-0.0372	0.0682	0.100	pCi/g					
Uranium-235	U	ND	+/-0.172	0.320	0.500	pCi/g					
Uranium-238		1.90	+/-1.73	1.75	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0261	0.0552	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0503	0.0937	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0686	0.118	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
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B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-3
Sample ID: 50722063

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-4	Project:	RNSC00199
Sample ID:	50722064	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.81	+/-0.350	0.117	0.800	pCi/g		CRB	11/09/01	1117	118050	1
Americium-241	U	ND	+/-0.075	0.144	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0337	0.0491	0.100	pCi/g						
Antimony-125	U	ND	+/-0.051	0.0893	0.200	pCi/g						
Barium-133	U	ND	+/-0.0259	0.0432	0.100	pCi/g						
Barium-140	U	ND	+/-0.448	0.803	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.233	0.409	0.700	pCi/g						
Bismuth-212		1.24	+/-0.391	0.280	0.500	pCi/g						
Bismuth-214		1.43	+/-0.215	0.068	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0222	0.0402	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0753	0.126	0.100	pCi/g						
Cerium-144	U	ND	+/-0.141	0.250	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0211	0.036	0.100	pCi/g						
Cesium-136	U	ND	+/-0.187	0.254	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0196	0.0379	0.100	pCi/g						
Chromium-51	U	ND	+/-0.365	0.662	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0247	0.0457	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0171	0.0305	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.029	0.0431	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0194	0.0343	0.100	pCi/g						
Europium-152	U	ND	+/-0.0575	0.0982	0.200	pCi/g						
Europium-154	U	ND	+/-0.0591	0.0918	0.500	pCi/g						
Europium-155	U	ND	+/-0.0676	0.128	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0235	0.042	0.100	pCi/g						
Iron-59	U	ND	+/-0.055	0.0976	0.300	pCi/g						
Lead-210	U	ND	+/-2.39	2.55	4.00	pCi/g						
Lead-212		2.16	+/-0.250	0.0621	0.100	pCi/g						
Lead-214		1.74	+/-0.227	0.075	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0257	0.0389	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0653	0.0598	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.19	2.12	1000	pCi/g						
Neptunium-239	U	ND	+/-0.119	0.213	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0183	0.0341	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0544	0.0938	0.050	pCi/g						
Potassium-40		1.69	+/-0.417	0.283	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0202	0.0365	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0243	0.0454	1.00	pCi/g						
Radium-228		1.81	+/-0.350	0.117	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.173	0.308	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-4 Project: RNSC00199
Sample ID: 50722064 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0217	0.0337	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0211	0.0332	0.080	pCi/g					
Thallium-208		0.546	+/-0.0856	0.0379	0.080	pCi/g					
Thorium-230		1.43	+/-0.215	0.068	1.00	pCi/g					
Thorium-234		2.02	+/-1.28	1.24	2.00	pCi/g					
Tin-113	U	ND	+/-0.031	0.0481	0.100	pCi/g					
Uranium-235	U	ND	+/-0.223	0.259	0.500	pCi/g					
Uranium-238		2.02	+/-1.28	1.24	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0216	0.0389	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0541	0.0945	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0478	0.0853	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-4
Sample ID: 50722064

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-5	Project:	RNSC00199
Sample ID:	50722065	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		1.28	+/-0.279	0.204	0.800	pCi/g		CRB	11/09/01	1118	118050	1
Americium-241	U	ND	+/-0.0484	0.0879	0.200	pCi/g						
Antimony-124	U	ND	+/-0.044	0.0793	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0834	0.152	0.200	pCi/g						
Barium-133	U	ND	+/-0.0365	0.0623	0.100	pCi/g						
Barium-140	U	ND	+/-0.745	1.28	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.371	0.646	0.700	pCi/g						
Bismuth-212		0.677	+/-0.422	0.511	0.500	pCi/g						
Bismuth-214		1.15	+/-0.203	0.107	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0263	0.0475	0.050	pCi/g						
Cerium-141	U	ND	+/-0.141	0.131	0.100	pCi/g						
Cerium-144	U	ND	+/-0.162	0.297	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0321	0.0514	0.100	pCi/g						
Cesium-136	U	ND	+/-0.281	0.487	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0362	0.0613	0.100	pCi/g						
Chromium-51	U	ND	+/-0.527	0.897	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0419	0.0768	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0195	0.0361	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0326	0.0901	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0341	0.0635	0.100	pCi/g						
Europium-152	U	ND	+/-0.080	0.130	0.200	pCi/g						
Europium-154	U	ND	+/-0.0938	0.152	0.500	pCi/g						
Europium-155	U	ND	+/-0.0747	0.145	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0354	0.0633	0.100	pCi/g						
Iron-59	U	ND	+/-0.114	0.203	0.300	pCi/g						
Lead-210		1.17	+/-0.808	0.684	4.00	pCi/g						
Lead-212		1.46	+/-0.215	0.0847	0.100	pCi/g						
Lead-214		1.32	+/-0.230	0.0962	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0327	0.0615	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0554	0.0894	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.88	3.61	1000	pCi/g						
Neptunium-239	U	ND	+/-0.135	0.248	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0315	0.0569	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0809	0.127	0.050	pCi/g						
Potassium-40	U	ND	+/-0.680	0.609	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0349	0.062	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0425	0.0682	1.00	pCi/g						
Radium-228		1.28	+/-0.279	0.204	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.315	0.534	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-5 Project: RNSC00199
Sample ID: 50722065 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0326	0.0568	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0339	0.0551	0.080	pCi/g					
Thallium-208		0.419	+/-0.0881	0.0611	0.080	pCi/g					
Thorium-230		1.15	+/-0.203	0.107	1.00	pCi/g					
Thorium-234		1.85	+/-1.09	0.815	2.00	pCi/g					
Tin-113	U	ND	+/-0.0435	0.0781	0.100	pCi/g					
Uranium-235	U	ND	+/-0.349	0.321	0.500	pCi/g					
Uranium-238		1.85	+/-1.09	0.815	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0334	0.0578	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0922	0.139	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0894	0.162	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-5
Sample ID: 50722065

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-1	Project:	RNSC00199
Sample ID:	50722066	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.04	+/-0.547	0.197	0.800	pCi/g		CRB	11/09/01	1322	118050	1
Americium-241	U	ND	+/-0.154	0.276	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0392	0.0682	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0815	0.153	0.200	pCi/g						
Barium-133	U	ND	+/-0.041	0.0679	0.100	pCi/g						
Barium-140	U	ND	+/-0.778	1.27	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.402	0.733	0.700	pCi/g						
Bismuth-212		2.09	+/-0.673	0.424	0.500	pCi/g						
Bismuth-214		2.59	+/-0.351	0.104	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0326	0.0591	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0972	0.183	0.100	pCi/g						
Cerium-144	U	ND	+/-0.205	0.385	0.500	pCi/g						
Cesium-134	U	ND	+/-0.030	0.0469	0.100	pCi/g						
Cesium-136	U	ND	+/-0.266	0.459	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0364	0.0626	0.100	pCi/g						
Chromium-51	U	ND	+/-0.786	1.08	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0395	0.0708	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0251	0.047	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0449	0.0803	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0291	0.0579	0.100	pCi/g						
Europium-152	U	ND	+/-0.0871	0.166	0.200	pCi/g						
Europium-154	U	ND	+/-0.0975	0.171	0.500	pCi/g						
Europium-155	U	ND	+/-0.200	0.186	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0416	0.0729	0.100	pCi/g						
Iron-59	U	ND	+/-0.0902	0.176	0.300	pCi/g						
Lead-210	U	ND	+/-4.21	6.73	4.00	pCi/g						
Lead-212		3.25	+/-0.379	0.0972	0.100	pCi/g						
Lead-214		3.05	+/-0.406	0.109	0.100	pCi/g						
Manganese-54		0.0834	+/-0.0383	0.0636	0.100	pCi/g						
Mercury-203		0.132	+/-0.108	0.091	0.100	pCi/g						
Neodymium-147	U	ND	+/-2.04	3.58	1000	pCi/g						
Neptunium-239	U	ND	+/-0.181	0.341	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0322	0.0616	1.00	pCi/g						
Niobium-95		0.154	+/-0.0774	0.140	0.050	pCi/g						
Potassium-40		1.64	+/-0.576	0.585	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0319	0.0531	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0412	0.0793	1.00	pCi/g						
Radium-228		3.04	+/-0.547	0.197	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.283	0.508	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-1
Sample ID: 50722066

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0315	0.0571	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0353	0.0617	0.080	pCi/g					
Thallium-208		1.02	+/-0.150	0.0555	0.080	pCi/g					
Thorium-230		2.59	+/-0.351	0.104	1.00	pCi/g					
Thorium-234		2.41	+/-2.09	2.27	2.00	pCi/g					
Tin-113	U	ND	+/-0.0463	0.0888	0.100	pCi/g					
Uranium-235	U	ND	+/-0.206	0.385	0.500	pCi/g					
Uranium-238		2.41	+/-2.09	2.27	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0362	0.0755	0.100	pCi/g					
Zinc-65	U	ND	+/-0.0823	0.103	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0832	0.152	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-1
Sample ID: 50722066

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-26	Project:	RNSC00199
Sample ID:	50722067	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		9.37	+/-1.29	0.307	0.800	pCi/g		CRB	11/09/01	0908	118050	1
Americium-241	U	ND	+/-0.0842	0.151	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0703	0.124	0.100	pCi/g						
Antimony-125	U	ND	+/-0.207	0.250	0.200	pCi/g						
Barium-133	U	ND	+/-0.0626	0.105	0.100	pCi/g						
Barium-140	U	ND	+/-1.21	2.14	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.630	1.15	0.700	pCi/g						
Bismuth-212		6.40	+/-1.28	0.731	0.500	pCi/g						
Bismuth-214		6.79	+/-0.952	0.166	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0484	0.0888	0.050	pCi/g						
Cerium-141	U	ND	+/-0.202	0.267	0.100	pCi/g						
Cerium-144	U	ND	+/-0.305	0.567	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0549	0.0886	0.100	pCi/g						
Cesium-136	U	ND	+/-0.475	0.707	0.300	pCi/g						
Cesium-137	U	ND	+/-0.061	0.0969	0.100	pCi/g						
Chromium-51	U	ND	+/-0.927	1.62	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0628	0.112	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0359	0.0684	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0732	0.116	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0464	0.0759	0.100	pCi/g						
Europium-152	U	ND	+/-0.147	0.243	0.200	pCi/g						
Europium-154	U	ND	+/-0.139	0.250	0.500	pCi/g						
Europium-155	U	ND	+/-0.254	0.244	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0621	0.107	0.100	pCi/g						
Iron-59	U	ND	+/-0.165	0.260	0.300	pCi/g						
Lead-210		4.10	+/-1.40	1.15	4.00	pCi/g						
Lead-212		10.3	+/-1.32	0.144	0.100	pCi/g						
Lead-214		7.64	+/-0.973	0.178	0.100	pCi/g						
Manganese-54	U	ND	+/-0.145	0.0991	0.100	pCi/g						
Mercury-203	U	ND	+/-0.157	0.132	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.17	5.70	1000	pCi/g						
Neptunium-239	U	ND	+/-0.252	0.476	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0539	0.0956	1.00	pCi/g						
Niobium-95	U	ND	+/-0.125	0.204	0.050	pCi/g						
Potassium-40	U	ND	+/-0.564	1.10	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0551	0.0883	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0881	0.117	1.00	pCi/g						
Radium-228		9.37	+/-1.29	0.307	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.532	0.810	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-26
Sample ID: 50722067

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0535	0.0931	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0502	0.0904	0.080	pCi/g					
Thallium-208		3.17	+/-0.424	0.0996	0.080	pCi/g					
Thorium-230		6.79	+/-0.952	0.166	1.00	pCi/g					
Thorium-234		5.57	+/-2.01	1.51	2.00	pCi/g					
Tin-113	U	ND	+/-0.0752	0.137	0.100	pCi/g					
Uranium-235	U	ND	+/-0.498	0.591	0.500	pCi/g					
Uranium-238		5.57	+/-2.01	1.51	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0542	0.0979	0.100	pCi/g					
Zinc-65	U	ND	+/-0.100	0.183	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.168	0.256	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-26
Sample ID: 50722067

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	MPF-25	Project:	RNSC00199
Sample ID:	50722068	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		9.29	+/-1.31	0.287	0.800	pCi/g		CRB	11/09/01	1322	118050	1
Americium-241	U	ND	+/-0.152	0.144	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0714	0.129	0.100	pCi/g						
Antimony-125	U	ND	+/-0.126	0.224	0.200	pCi/g						
Barium-133	U	ND	+/-0.0601	0.102	0.100	pCi/g						
Barium-140	U	ND	+/-1.20	2.17	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.686	1.05	0.700	pCi/g						
Bismuth-212		5.69	+/-1.15	0.663	0.500	pCi/g						
Bismuth-214		6.94	+/-0.970	0.171	0.200	pCi/g						
Cerium-139	U	ND	+/-0.046	0.0848	0.050	pCi/g						
Cerium-141	U	ND	+/-0.235	0.254	0.100	pCi/g						
Cerium-144	U	ND	+/-0.315	0.540	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0535	0.0861	0.100	pCi/g						
Cesium-136	U	ND	+/-0.379	0.672	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0587	0.0948	0.100	pCi/g						
Chromium-51	U	ND	+/-0.905	1.56	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0602	0.101	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0346	0.0666	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0663	0.106	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0494	0.0847	0.100	pCi/g						
Europium-152	U	ND	+/-0.140	0.238	0.200	pCi/g						
Europium-154	U	ND	+/-0.128	0.245	0.500	pCi/g						
Europium-155	U	ND	+/-0.248	0.249	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0574	0.102	0.100	pCi/g						
Iron-59	U	ND	+/-0.147	0.232	0.300	pCi/g						
Lead-210		3.20	+/-1.32	1.11	4.00	pCi/g						
Lead-212		9.30	+/-1.19	0.163	0.100	pCi/g						
Lead-214		7.88	+/-1.00	0.167	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0613	0.102	0.100	pCi/g						
Mercury-203	U	ND	+/-0.131	0.148	0.100	pCi/g						
Neodymium-147	U	ND	+/-3.07	5.62	1000	pCi/g						
Neptunium-239	U	ND	+/-0.409	0.452	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0509	0.0911	1.00	pCi/g						
Niobium-95	U	ND	+/-0.127	0.201	0.050	pCi/g						
Potassium-40	U	ND	+/-0.536	1.05	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0498	0.0872	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0613	0.115	1.00	pCi/g						
Radium-228		9.29	+/-1.31	0.287	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.480	0.865	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: MPF-25
Sample ID: 50722068

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.0544	0.0998	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0459	0.0888	0.080	pCi/g					
Thallium-208		3.05	+/-0.409	0.0933	0.080	pCi/g					
Thorium-230		6.94	+/-0.970	0.171	1.00	pCi/g					
Thorium-234		7.11	+/-2.20	1.40	2.00	pCi/g					
Tin-113	U	ND	+/-0.0712	0.127	0.100	pCi/g					
Uranium-235		0.842	+/-0.590	0.572	0.500	pCi/g					
Uranium-238		7.11	+/-2.20	1.40	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.066	0.0906	0.100	pCi/g					
Zinc-65	U	ND	+/-0.170	0.180	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.203	0.229	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

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Report Date: November 14, 2001

Contact: Tom Bracke
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Client Sample ID: MPF-25
Sample ID: 50722068

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID:	DM-12	Project:	RNSC00199
Sample ID:	50722069	Client ID:	RNSC001
Matrix:	Soil		
Collect Date:	03-OCT-01		
Receive Date:	17-OCT-01		
Collector:	Client		

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.17	+/-0.557	0.122	0.800	pCi/g		CRB	11/09/01	1323	118050	1
Americium-241	U	ND	+/-0.0899	0.160	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0335	0.0524	0.100	pCi/g						
Antimony-125	U	ND	+/-0.057	0.102	0.200	pCi/g						
Barium-133	U	ND	+/-0.0301	0.0478	0.100	pCi/g						
Barium-140	U	ND	+/-0.524	0.869	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.260	0.470	0.700	pCi/g						
Bismuth-212		1.89	+/-0.510	0.308	0.500	pCi/g						
Bismuth-214		1.89	+/-0.262	0.0715	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0256	0.0461	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0795	0.132	0.100	pCi/g						
Cerium-144	U	ND	+/-0.158	0.294	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0232	0.0365	0.100	pCi/g						
Cesium-136	U	ND	+/-0.200	0.291	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0227	0.0404	0.100	pCi/g						
Chromium-51	U	ND	+/-0.418	0.775	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0275	0.0506	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0194	0.036	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.026	0.0446	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0191	0.036	0.100	pCi/g						
Europium-152	U	ND	+/-0.0642	0.114	0.200	pCi/g						
Europium-154	U	ND	+/-0.0621	0.0892	0.500	pCi/g						
Europium-155	U	ND	+/-0.140	0.140	0.500	pCi/g						
Iridium-192	U	ND	+/-0.027	0.049	0.100	pCi/g						
Iron-59	U	ND	+/-0.0737	0.104	0.300	pCi/g						
Lead-210	U	ND	+/-2.88	2.84	4.00	pCi/g						
Lead-212		3.19	+/-0.359	0.0719	0.100	pCi/g						
Lead-214		2.22	+/-0.288	0.0793	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0481	0.0462	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0421	0.0724	0.100	pCi/g						
Neodymium-147	U	ND	+/-1.41	2.44	1000	pCi/g						
Neptunium-239	U	ND	+/-0.149	0.248	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0216	0.0378	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0579	0.0974	0.050	pCi/g						
Potassium-40		0.961	+/-0.353	0.352	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0216	0.0378	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0272	0.0497	1.00	pCi/g						
Radium-228		3.17	+/-0.557	0.122	0.500	pCi/g						
Ruthenium-106	U	ND	+/-0.193	0.346	0.800	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-12
Sample ID: 50722069

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Silver-110m	U	ND	+/-0.020	0.0362	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0227	0.0324	0.080	pCi/g					
Thallium-208		0.930	+/-0.131	0.0411	0.080	pCi/g					
Thorium-230		1.89	+/-0.262	0.0715	1.00	pCi/g					
Thorium-234		3.33	+/-2.10	1.38	2.00	pCi/g					
Tin-113	U	ND	+/-0.0318	0.060	0.100	pCi/g					
Uranium-235	U	ND	+/-0.253	0.275	0.500	pCi/g					
Uranium-238		3.33	+/-2.10	1.38	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0244	0.0459	0.100	pCi/g					
Zinc-65	U	ND	+/-0.057	0.101	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.0631	0.102	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/22/01	1512	116173

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
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J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on an "as received" basis.

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 14, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: DM-12
Sample ID: 50722069

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

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Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Contact: Tom Bracke
Project: Routine Analytical

Report Date: November 15, 2001

Client Sample ID: WM3
Sample ID: 50923001
Matrix: Soil
Collect Date: 19-OCT-01
Receive Date: 25-OCT-01
Collector: Client

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec												
Gammaspec, Gamma, Solid (Standard List)												
Actinium-228		3.78	+/-0.679	0.219	0.800	pCi/g		CRB	11/09/01	0704	118539	1
Americium-241	U	ND	+/-0.186	0.326	0.200	pCi/g						
Antimony-124	U	ND	+/-0.0415	0.0699	0.100	pCi/g						
Antimony-125	U	ND	+/-0.0934	0.178	0.200	pCi/g						
Barium-133	U	ND	+/-0.0493	0.0755	0.100	pCi/g						
Barium-140	U	ND	+/-0.343	0.632	0.500	pCi/g						
Beryllium-7	U	ND	+/-0.375	0.631	0.700	pCi/g						
Bismuth-212		2.82	+/-0.658	0.510	0.500	pCi/g						
Bismuth-214		3.18	+/-0.425	0.129	0.200	pCi/g						
Cerium-139	U	ND	+/-0.0333	0.0606	0.050	pCi/g						
Cerium-141	U	ND	+/-0.0864	0.145	0.100	pCi/g						
Cerium-144	U	ND	+/-0.217	0.401	0.500	pCi/g						
Cesium-134	U	ND	+/-0.0454	0.0597	0.100	pCi/g						
Cesium-136	U	ND	+/-0.116	0.219	0.300	pCi/g						
Cesium-137	U	ND	+/-0.0428	0.0695	0.100	pCi/g						
Chromium-51	U	ND	+/-0.465	0.812	0.600	pCi/g						
Cobalt-56	U	ND	+/-0.0369	0.0676	0.100	pCi/g						
Cobalt-57	U	ND	+/-0.0272	0.051	0.050	pCi/g						
Cobalt-58	U	ND	+/-0.0389	0.0689	0.100	pCi/g						
Cobalt-60	U	ND	+/-0.0334	0.0612	0.100	pCi/g						
Europium-152	U	ND	+/-0.107	0.185	0.200	pCi/g						
Europium-154	U	ND	+/-0.0945	0.184	0.500	pCi/g						
Europium-155	U	ND	+/-0.218	0.209	0.500	pCi/g						
Iridium-192	U	ND	+/-0.0383	0.0699	0.100	pCi/g						
Iron-59	U	ND	+/-0.0822	0.152	0.300	pCi/g						
Lead-210	U	ND	+/-5.14	8.59	4.00	pCi/g						
Lead-212		4.74	+/-0.548	0.124	0.100	pCi/g						
Lead-214		3.79	+/-0.490	0.127	0.100	pCi/g						
Manganese-54	U	ND	+/-0.0399	0.0746	0.100	pCi/g						
Mercury-203	U	ND	+/-0.0746	0.0819	0.100	pCi/g						
Neodymium-147	U	ND	+/-0.767	1.41	1000	pCi/g						
Neptunium-239	U	ND	+/-0.203	0.372	2.00	pCi/g						
Niobium-94	U	ND	+/-0.0461	0.0665	1.00	pCi/g						
Niobium-95	U	ND	+/-0.0607	0.109	0.050	pCi/g						
Potassium-40	U	ND	+/-0.396	0.830	1.00	pCi/g						
Promethium-144	U	ND	+/-0.0356	0.0643	0.080	pCi/g						
Promethium-146	U	ND	+/-0.0448	0.0845	1.00	pCi/g						
Radium-228		3.78	+/-0.679	0.219	0.500	pCi/g						

Certificate of Analysis

Company : Radiation Services
Address : 10 South River Road
Cranbury, New Jersey 08512

Report Date: November 15, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM3 Project: RNSC00199
Sample ID: 50923001 Client ID: RNSC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec											
Gammaspec, Gamma, Solid (Standard List)											
Ruthenium-106	U	ND	+/-0.301	0.557	0.800	pCi/g					
Silver-110m	U	ND	+/-0.0366	0.0653	0.080	pCi/g					
Sodium-22	U	ND	+/-0.0339	0.0659	0.080	pCi/g					
Thallium-208		1.36	+/-0.184	0.0734	0.080	pCi/g					
Thorium-230		3.18	+/-0.425	0.129	1.00	pCi/g					
Thorium-234		3.72	+/-3.02	2.67	2.00	pCi/g					
Tin-113	U	ND	+/-0.0505	0.0879	0.100	pCi/g					
Uranium-235	U	ND	+/-0.348	0.434	0.500	pCi/g					
Uranium-238		3.72	+/-3.02	2.67	1.00	pCi/g					
Yttrium-88	U	ND	+/-0.0382	0.0742	0.100	pCi/g					
Zinc-65	U	ND	+/-0.122	0.127	0.300	pCi/g					
Zirconium-95	U	ND	+/-0.172	0.150	0.200	pCi/g					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	WEO	10/26/01	1341	116999

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL 300	

Notes:
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UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Certificate of Analysis

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Cranbury, New Jersey 08512

Report Date: November 15, 2001

Contact: Tom Bracke
Project: Routine Analytical

Client Sample ID: WM3
Sample ID: 50923001

Project: RNSC00199
Client ID: RNSC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by

APPENDIX C

Final Status Survey Plan
for
License Termination of
Heritage Minerals
NRC License # SMB-1541

Table of Contents

1.0 Introduction

This decommissioning plan addresses the NRC licensed area and buildings on the Heritage Minerals (HMI) Site in Lakehurst, New Jersey. Beginning in 1987, on sands stockpiled from a previous company's operations, HMI processed several types of commercial minerals through gravimetric, conductive and magnetic separation. No chemicals were used in the process. Operations ceased in 1990. A detailed description of the operations and site history is provided in Appendix C.

One of the commercial minerals produced by HMI, monazite, contains thorium and uranium. Possession of this material, when greater than 0.05% by weight, is a licensed activity regulated by the Nuclear Regulatory Commission (NRC). This document presents a plan for proper removal of licensed material and survey of the site to demonstrate that the property and equipment is suitable for license termination and release for unrestricted use.

A decommissioning cost estimate is included as Attachment I.

2.0 Existing Data Review

The available data on post decontamination surveys consists of fixed and removable measurements obtained by HMI personnel at ten locations, five each in the wet mill and dry mill. The removable alpha and beta results are below any release limits discussed in NRC guidance documents, however the documentation and quality control procedures are not sufficient to satisfy the current requirements for decommissioning as put forth in NUREG-5849. Therefore, the available data on post decontamination measurements will not be suitable for inclusion in the final status survey report.

Another source of existing data is a radon flux mapping procedure developed by SENES Consultants Limited (SENES 95). However, the purpose of that study was "to provide a mapping procedure which calculates radon flux rates for the proposed residential site". The information does not pertain to decommissioning the buildings or affected outdoor areas, and will not be utilized in this plan.

A survey of the natural background levels of uranium and thorium, and the background exposure rate onsite was conducted in 1996 by Radiation Science Inc. Those values were established using sampling and statistical guidance from NUREG- 5849. The information from that study will be used to correct final survey soil samples and exposure rate measurements for the contribution due to background.

Samples of the monazite pile analyzed by Teledyne Isotopes in April of 1990, indicate Ra-226, Pb-214, and Bi-214, all daughters in the uranium series, to be in equilibrium. Likewise, three daughter nuclides in the thorium series, Ac-228, Pb-212, and Tl-208 were found to be in equilibrium. This data is used to support the assumption that all natural series decay chains are in equilibrium.

3.0 Decommissioning Activities

The following list of activities is proscribed in NUREG-5849 as requirements leading to the termination of an NRC license, and serve as a rough work plan for this project.

- Terminate the possession and storage of radioactive material.
- Remove radioactive material from the facility.
- Properly dispose of any radioactive material removed.
- Submit an NRC-314 “Disposition of Radioactive Materials” form.
- Conduct Final Site Survey.
- Submit report to the NRC.

4.0 Release limits

All limits discussed here are selected to allow unrestricted release of the site. HMI's license states "for measurement purposes all contamination may be assumed to be natural thorium in equilibrium with its daughters' Therefore, surface activity limits are based on alpha emissions from natural thorium. Soil concentration limits are based on total uranium (U-238 + U-234) and total thorium (Th-232 + Th-228) in equilibrium with progeny in their respective decay chains. Release limits stated here are above background, and are summarized in Table 2.

The background area in terms of dose rate and uranium and thorium soil concentrations is the unmined areas of the site. During May 1996 an extensive background determination was conducted following the guidance in NUREG-5849. (RSI 7/96) Those values will be used for “background” corrections of soil samples, and as the “baseline” dose rate. They are reproduced in Table 1. The report is included in its entirety in Appendix A.

To date there has been no background values established for equipment and buildings. The background area for surface activity measurements will be the unaffected buildings onsite, (refer to Figure 2). A separate background value will be established for concrete surfaces and metal surfaces, as part of the final site survey.

Parameter	Level
Total uranium Concentration	0.62 pCi/g
Total thorium Concentration	0.48 pCi/g
Exposure Rate	2.84 μR/hr

Table 1 - Background concentrations and exposure rate

4.1 Surface activity

The activity limits specified in HMI's materials license are based on thorium in equilibrium with its daughters. Those values are 1,000 dpm/100 cm^2 average fixed, 3,000 dpm/100 cm^2 maximum fixed and 200 dpm/100 cm^2 maximum removable. These release limits will be used for this decommissioning project.

4.2 Soil concentration

Condition 15 of Heritage Minerals' NRC license specifies "All areas ... on a map of the licensee's site attached to the letter dated September 27,1990 shall be decontaminated to meet the criteria for release for unrestricted use described in Option I of the Branch Technical Position "Disposal or Onsite Storage of Thorium or uranium Wastes from Past Operations". The limit for total thorium is 10 pCi/g, and the limit for total Uranium is also 10 pCi/g. As discussed in the next section, these soil activity limits will also demonstrate compliance with the exposure rate limit.

4.3 Exposure Rate

There are two methods for demonstrating compliance with the dose rate limits. The first method would involve direct measurements with a microRmeter or pressurized ion chamber. The "shine" from the nearby, unlicensed tailings would make this difficult without shielding the meter. However, to obtain readings at waist level would require an extremely large lead cone, which would be unmanageable in the field. The second method is to obtain post-remediation soil samples for laboratory analysis, and base the exposure rate on soil activity once background activity has been subtracted. This is the method that will be employed for this decommissioning. The NRC's Branch Technical Position Paper explicitly states " ..the concentrations are sufficiently low so that no individual may receive an external dose in excess of 10 micro-roentgens per hour above background" The concentrations referred to (Option 1, stated in section 4.2 above) are those selected here for the soil cleanup criteria. In the spirit of ALARA, HMI assumes final soil concentrations will be well below the 10 pCi/g (therefore 10 μr/hr) limits. A limited number of soil concentration- to- exposure calculations using computer software such as Microshield, will be conducted.

Parameter	Release Limit
Total thorium in soil	10 pCi/g
Total uranium in soil	10 pCi/g
Surface activity - max. fixed	3,000 dpm/100 cm^2
Surface activity - avg. fixed	1,000 dpm/100 cm^2
Surface activity - removable	200 dpm/100 cm^2
Exposure rate	10 μR/hr

Table 2 - Release limits above background

5.0 Affected / Unaffected Survey Units

The basic rationale for dividing the site into affected and unaffected areas is provided in this section. Appendix A provides a detailed description of the operating history used to identify the affected process trains. The site at Heritage Minerals, while no longer processing sands for the concentration of various naturally occurring minerals, remains in a shutdown condition. Some support buildings are still used for equipment storage and repair. The wet and dry mill equipment is non-operational but both buildings contain millions of dollars worth of heavy equipment including; tanks, elevators, high tension separators, piping, and hundreds of tons of heavy equipment and structural supports. The complexity of the interior of both buildings pose a challenge to the application of a two dimensional grid system survey as proscribed in NUREG 5849.

Both the wet and dry mills have distinct process “trains” or routes the incoming material traveled. These routes were not linear, so at some points the depleted stream was diverted, while at others concentration of uranium and thorium occurred. Each mill will be divided into survey units based on the potential for concentration of uranium/thorium and common historical use with regards to material contact, as suggested in NUREG 1505. The process flow diagram (Figure 1) identifies the movement, separation, and enrichment of the various product streams through the mills. The diagram follows the raw material (ASARCO sands) to the finished product streams (zircon, leucoxene, rutile, and monazite) and mill tailings. Each process step represents a further enrichment in Thorium and Uranium since these elements follow the product stream and are removed with the monazite in the final process separation.

Each process step is represented by a physical set of equipment consisting of tanks, piping, conveyors, and/or heavy equipment. Each process step includes duplicate equipment systems. The individual systems handle the same feed material in parallel so as to increase through-put. Since each step enriches the process stream in the product, thorium and uranium are typically more

concentrated at the end, than at the beginning of each process step. Once the product leaves the process equipment in transit to the next step, such as in a piping or conveyor system, the concentration of these isotopes remains the same.

Individual process steps (e.g. zircon magnetic separation) and related equipment (e.g. magnetic coils and conveyors) represent logical survey units which can be examined according to the rules of NUREG 5849. This allows application of the NUREG-5849 survey recommendations (affected or unaffected, number of sampling points, and averaging rules) in a meaningful fashion to obtain a report representative of the final plant status. The process trains with the potential to be contaminated based on process knowledge are highlighted on figure 1. Outdoor areas are shown on Figure 2.These survey units are identified and located as described below:

Outdoor Properties- Unaffected

Except for the monazite pile and the area immediately surrounding the pile, all outdoor properties are unaffected. For purposes of the final status survey, the area of open space extending beyond the wet mill building to the north, south, and east by approximately 10 meters will be included in the survey. The area of open space extending approximately 10 meters around the dry mill is also included in the survey. See Figures 2, 3, 4,and 5.

Office Building - Unaffected

The Office Building was used to support administrative personnel. No process material was used in this building. See Figure 2.

Warehouse Building - Unaffected

The Warehouse Building was used for storage of new mechanical equipment and parts. No process material was used in this building. See Figure 2.

Service Building - Unaffected

The Service Building was used for repair of mechanical equipment from plant operations. No process material was used in this building. See Figure 2.

Change House - Unaffected

The Change House was used for site personnel only. It included showers and lockers for workers at the site. No process material was used in this building. See Figure 2.

Laboratory - Unaffected

The Laboratory was used to analyze product samples from both mills. No process material was used in this building except as analytical samples. See Figure 2.

Wet Mill - see Appendix B

The Wet Mill Building contains process equipment used to extract the product materials from the raw feed. The equipment contained in the Wet Mill is divided into survey units as described in Appendix B. Some of these units are affected while the majority are unaffected. The floor and lower walls of the Wet Mill will be surveyed as an unaffected areas.

Dry Mill - see Appendix B

The Dry Mill Building contains process equipment used to extract the product materials from the process feed from the Wet Mill. The equipment contained in the Dry Mill is divided into survey units as described in appendix B. Some of these units are unaffected. The floor, ceiling and lower walls of the Dry Mill will be surveyed as affected areas.

Monazite Pile - Affected

Ten meter square grids will be established around the existing Monazite Pile, including the Monazite Pile and extending 10 meters beyond its current boundaries or to the first natural barrier where monazite would likely accumulate in higher concentrations as a result of wind or rain wash-out since the pile was not always covered. (e.g. the natural sand berms to the east and west and the low ground spot to the north of the

pile). The area encompassed by the grids will be considered as an affected outdoor area.

6.0 Survey protocol

6.1 Affected Survey Units

Indoor

Affected equipment will be surveyed by dismantling as necessary and scanning with an appropriate survey meter 100% of the surface area of a single equipment train within a multiple unit system. Thirty, fixed location, one to two minute integrated measurements will be obtained in each survey unit. A wipe sample will be obtained at the location of each fixed measurement.

Outdoor

Following the packaging of the monazite for shipment, outdoor affected survey units will be scanned over 100% of the surface area with a 2”x2” sodium iodide crystal. Soil samples will be collected at a rate of one per 100 square meter grid.

6.2 Unaffected Survey Units

Indoor

Unaffected units will be surveyed by scanning 10% of the surface area with an appropriate survey meter. As with the affected survey units, thirty fixed location measurements will be obtained in each survey unit, with corresponding wipe samples. If any measurement within a particular survey unit is greater than 25%of the value for unrestricted release provided in section 4.0, then the entire survey unit will be deemed to be affected and resurveyed according to the protocol for survey of affected units as provided in section 6.1.

Outdoor

Outdoor unaffected areas will be scanned over 10% of their surface area, in the same manner as the affected areas. Thirty soil samples will be collected from the unaffected area surrounding both mills. If any soil sample measurement within a particular survey unit is greater than 75%of the value for unrestricted release provided in section 4.0, then the entire survey unit will be deemed to be affected and resurveyed according to the more stringent protocol for survey of affected units as provided in section 6.1. While there is no reason to expect any of the unaffected areas to contain concentrations of monazite ore, the

requirement to upgrade the survey on the basis of a conservative guideline approach offers assurance that the survey unit will be adequately characterized.

7.0 Decontamination plan

7.1 Buildings and equipment

Building surfaces or equipment which may have been impacted by operations consists primarily of metal. No chemicals were used in the process, so it is likely monazite residue will be confined to the surface layer in the form of dust. Since decontamination was performed by Heritge Minerals in 1990 and it is unlikely that any recontamination has occurred, additional decontamination efforts may not be necessary. However, if decontamination becomes necessary, these surfaces would be brushed and vacuumed, using appropriate engineering controls and personnel protective equipment.

7.2 Monazite pile

The monazite pile (approximately 530 m^3) will be packaged in DOT approved containers and prepared for shipment. This will be accomplished using a small front end loader to transfer the material. A staging area will be set up immediately outside the existing fence to serve as a buffer zone between the controlled area and the clean area. Dust control measures may include a temporary enclosure for transfer of material, or a water spray system in the area surrounding operations. Any residual monazite sands on surface soils in the affected areas will be removed in a similar manner.

8.0 Data Reduction

Raw data collected during the final site survey will be validated, and reported in units identical to those of the release limits. For surface activity measurements, the average background from the reference area will be subtracted from the raw counts, and the results adjusted for the meters (4 pi) efficiency and probe area. Results will be reported in $dpm / 100\ cm^2$.

Soil samples will be analyzed by gamma spectroscopy. The U-238 activity will be inferred from the 609 kev photopeak of its daughter Bi-214. The Th-232 activity will be estimated from the 238 kev photopeak of its daughter Pb-212. All samples will be dried, sieved, and sealed for twenty eight days prior to counting to remove any concerns about secular equilibrium with the parent nuclides. Results will be reported in picocuries per gram (pCi/g) and adjusted for background. The U-238 results will be doubled to account for the U-234 activity, and reported as total uranium. The Th-238 results will be doubled to account for the Th-228 activity and reported as total thorium.

Exposure rate measurements will be reported in microRem per hour above background.

9.0 Statistical treatment

Guidance on the data reduction, statistical treatment and comparison with release limits was obtained from NUREG-1505 "A Nonparametric Statistical Methodolgy for the Design and Analysis of Final Status Decommissioning Surveys" (NRC 1995). This guidance is appropriate because data sets with most values reported as "less than" the instrument detection limits, or near background do not produce a normal distribution of values. When the data is plotted as a histogram, for example, the curve stops abruptly at the "less than" value or background, not smoothly approaching zero, i.e. the curve is not parametric. It is expected that after proper decontamination, residual radioactivity on most equipment and building surfaces at this facility will be less than the detection limit of the equipment. The only requirements on the data for nonparametric analysis is that the measured values are independent of one another. Because of the short range of alpha particles, any given surface activity measurements will not affect measurements at adjacent locations. Proper collection techniques for soil samples will prevent cross contamination, and thereby insure independent results.

There are three "tests" of the data from each survey unit. First. the highest single value in each survey unit must be less then three times the average release limit. The second step is to compare the median value, determined by the Wilcoxin Signed Ranks (WSR) test to the single, fixed value of the release limit. The final step is to use a Quantile test to check for small areas of elevated activity. The specifics of calculating these parameters are found in NUREG-1505.

10.0 Quality Assurance

Providing quality data for a decommissioning project is based on certain key elements as discussed in EPA guidance documents (EPA 504/G-93/071). These are known as PARCC (Precision, Accuracy, Representativeness, Completeness, and Comparability) parameters. In addition, the sensitivity of measurements, expressed as the Minimum Detectable Activity (MDA) must be sufficiently low to detect contamination $\leq$ 25% of the release criteria (NRC, 1992). The process for assessing these parameters is discussed below.

Precision

Precision is a test of how closely one can replicate a measurement. Replicate measurements for total alpha contamination will be made by obtaining two one minute counts in sequence at the same location for approximately 5% of the total number of samples. For soil samples, 5% will be blended and split in the field, then sent to the laboratory for individual analysis. The formula below will be used to determine the relative percent difference (RPD). One could expect measurements at this site to be reproduced within plus or minus (±) the RPD for a given type of measurement with similar instrumentation and count times.

$$RPD = \frac{\text{Measurement - Replicate Meas.}}{(\text{Measurement + Replicate Meas.})/\ 2} \times 100\%$$

The RPD is often high for measurements near background, or low count rate alpha measurements. Also, “less then” values cannot be used to calculate a RPD. Therefore, the RPD will be calculated for positive values at least 50% of the release limits.

Accuracy

Accuracy is a test of how close the meter's response is to a known value. The “known value” will be a NIST traceable Thorium-230 source. Immediately after calibration and efficiency determination, a control chart will be established for each meter. The chart will be based on repetitive counts of a check source, and calculation of the average, 2 and 3 sigma values. A source check "jig" will be used to ensure the source and meter are always in the same position relative to one another. To ensure continued accuracy in the field a log will be established at the beginning of the project. Operational and source checks for field instruments will be performed each day of use, and recorded on the logsheet. All recorded measurements in the final report will be obtained with meters which pass the operational check and source check within the ± 3 sigma range.

Contamination in a geometry different from the calibration standards may be detected with a different efficiency. However, the difference between the meter's efficiency for a point source and large areas of contamination is estimated to be less than 6% (NRC, 1995a).

Representivity

Representative data would be that data which accurately reflects the environment where the measurement was obtained. One measurement of this parameter is to simply compare the number of times the premise the data is

intended to show fails, compared to the number of times the premise is tested. For this project, one premise which may be tested is "the survey technique of Tech. A is capable of correctly detecting residual thorium". The QA manager will re -survey selected areas of elevated activity, counting any area determined not to be elevated as non representative data. The equation to measure this is:

$$\text{Representivity} = (1-F/N) \times 100\%$$

The goal for this project is to have all data 95% representative, or greater.

Completeness

Completeness is a measure of the amount of valid data obtained compared to the amount that was specified. For the purposes of evaluation, data defined as invalid through a QA review is subtracted from the complete data set to determine the number of valid data points. Generally, completeness greater than 95% is desirable.

Comparability

Comparability is a non quantitative evaluation of the agreement between different types of data sets which should be, intuitively, related to each other. For example, on this project, all locations exhibiting elevated dose rates, should also exhibit elevated gamma count rates, illustrating total comparability of these two data sets. The alpha results are not similarly comparable because the physical range of the alpha particle is measured in centimeters, insufficient to affect local dose rates.

Sensitivity

To determine a meter's suitability for a measurement, the minimum detectable activity (MDA) is compared with the project specific release limits. The minimum detectable activity will be calculated using an equation from NUREG-5849, and the average of the daily background and source checks. Count times and instrumentation will be selected such that the MDA is at least 25% or less of the established release limits. MDA calculations will be presented in the final status report, as well as calibration certificates for field instrumentation.

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Appendix A

Background Soil Activity Determination

Appendix B

Wet Mill and Dry Mill Survey Units

In this appendix, the process equipment in the wet mill and the dry mill is divided into "Survey Units" based on the sequence in which these units were utilized in the HMI operations. The equipment in each unit and the material treated in and around the equipment are described.

Survey units are categorized as "Affected" or "Unaffected" for the purpose of determining the degree to which each of the areas is surveyed according to NUREG-5849. The decision to characterize a particular survey unit as affected or unaffected has been made on the basis of the monazite content of the process material that was in contact with, or likely to be in contact with, the equipment representing that particular survey unit. While every process stream in the plant was not analyzed for monazite content, the process history described in Appendix C makes it easy to estimate the monazite concentrations in the various process streams based on analyses of some key plant products. For example, based on the analysis of the table concentrate (740 ppm Th + U) it can be concluded that the table feed contained a maximum of 370 ppm Th + U since the tables effected a 2 to 1 concentration (see Appendix C). Since the table feed is the same as the spiral circuit concentrate, it follows that the entire spiral circuit (roughers, scavengers, cleaners, re-cleaners, and finishers) was unaffected based on the fact that all streams within the spiral circuit were at or below the 370 ppm level.

It should also be noted that the west half of the wet mill, including the spirals, launders, sumps, and pumps was never used in the HMI operations. It has remained dry and completely abandoned ever since the termination of ASARCO operations in 1982.Therefore, the west half of the wet mill, including the floor, spirals, launders, sumps, and pumps will not be included in this survey.

Survey Unit #1, New Feed Hopper and Silo - Unaffected

This series of large equipment located outdoors on the Dry Mill side of the processing facility consists of: a New Feed Hopper, conveyors, and a 200 ton capacity New Feed Silo. Feed material (ASARCO tailings) was carried by front-end loader and dumped into the New Feed Hopper and conveyed to the large capacity, New Feed Silo. New feed material from the silo was metered onto a conveyor and carried to the Wet Mill Screen Feed Sump (2). The New Feed Hopper, New Feed Silo, and conveyors to the Wet Mill Screen Feed will be considered a single survey unit. This unit is considered unaffected because it was used to handle the new feed (≤ 180 ppm Th & U).

Survey Unit #2, Wet Mill Screen Feed Sump - Unaffected

The Wet Mill Screen Feed Sump (2) consists of a mechanical screen which removed debris from the feed material and a large sump tank. Feed material was washed with clean process water through the screen and into the sump. The resulting slurry was pumped across the site to the Rougher Spirals Feed Sump (3) located in the Wet Mill. The Wet Mill Screen Feed Sump (2) and piping to the Rougher Spirals Feed Sump (3) will be considered as a single survey unit. This unit was not used to effect any monazite concentration. It is therefore considered unaffected.

Wet Mill Building

Survey Unit #3, Rougher Spirals Feed Sump - Unaffected

The Rougher Spirals Feed Sump (3) located on the 0' elevation of the Wet Mill received the sand slurry from the Wet Mill Screen Feed (2). The sump served as a buffer to provide a supply of material to the Rougher Spirals (4). The Rougher Spirals Feed Sump (3), pump, and piping to the Rougher Spirals (4) will be considered as a single survey unit. The materials handled by this unit were of similar composition to the new feed (≤ 180 ppm Th & U). Therefore, unit #3 is considered unaffected.

Survey Unit #4, Rougher Spirals - Unaffected

The Rougher Spirals (4), located on the 24' elevation of the Wet Mill and consisting of four banks of twenty, five-turn spiral separators operating in parallel, represent the first step in the separation of the feed material. The centrifugal action of the water as it cascaded down the spirals caused the sand slurry to separate on the basis of particle density. Concentrate, enriched in heavy minerals including monazite, was mechanically separated from the slurry stream and passed to the Cleaner Spirals Feed Sump (5). Tailings, depleted of heavy

minerals, were passed to the Scavenger Spirals Feed Sump (10). The Rougher Spirals (4) will be considered as a single survey unit. This unit is considered unaffected because it was used to remove only part of the light minerals. Therefor it only effected minor concentration of the heavy minerals. The rougher concentrate remained well below source material concentration.

Survey Unit #5, Cleaner Spirals Feed Sump - Unaffected

The Cleaner Spirals Feed Sump (5) located on the 0' elevation of the Wet Mill received the concentrate from the Rougher Spirals (4) via a series of "launders" (water troughs through which the slurry flowed by gravity to the lower elevation process equipment). The sump served as a buffer to provide a supply of material to the Cleaner Spirals (6). The launders from the Rougher Spirals (4), Cleaner Spirals Feed Sump (5), pump, and piping to the Cleaner Spirals (6) will be considered as a single survey unit. This unit was used to pump rougher spiral concentrates which were well below source material levels. Therefore, this unit is considered unaffected.

Survey Unit #6, Cleaner Spirals - Unaffected

The Cleaner Spirals (6), located on the 24' elevation of the Wet Mill, further concentrated the product stream. Heavy minerals were separated as before on the basis of particle density in two banks of twenty, five-turn spirals. Concentrate from the Cleaner Spirals (6) was passed to the Recleaner Spirals Feed Sump (7) while the depleted tailings were passed to the Thickener (40). The Cleaner Spirals will be considered as a single survey unit. The cleaner spiral concentrate remained well below source material levels. Therefore this unit is considered unaffected.

Survey Unit #7, Recleaner Spirals Feed Sump - Unaffected

The Recleaner Spirals Feed Sump (7) located on the 0' elevation of the Wet Mill received the concentrate from the Cleaner Spirals (6) via launders. The sump served as a buffer to provide material to the Recleaner Spirals (8). The launders from the Cleaner Spirals (6), Recleaner Spirals Feed Sump (7), pump, and piping to the Recleaner Spirals (8) will be considered as a single survey unit. This unit is considered unaffected for the same reason as units 5 and 6: the sand that was being pumped by this unit remained well below source material levels.

Survey Unit #8, Recleaner Spirals - Unaffected

The Recleaner Spirals (8) located on the 24' elevation of the Wet Mill further concentrated the product stream. Heavy minerals were separated as before on the basis of particle density in two banks of twenty, five-turn spirals. The concentrate was passed to the Finisher Spirals Sump (9) while the depleted tailings were passed to the Thickener (13). The Recleaner Spirals (8) will be considered as a single survey unit. This unit is considered unaffected because monazite concentration in all streams treated by the recleaner spirals were below source material levels.

Survey Unit #9, Finisher Spirals Feed Sump - Unaffected

The Finisher Spirals Feed Sump (9) located on the 0' elevation of the Wet Mill received the concentrate from the Recleaner Spirals (8) via launders. The sump served as a buffer to provide material to the Finisher Spirals (14). The launders from the Recleaner Spirals (8), Finisher Spirals Feed Sump (9), pump, and piping to the Finisher Spirals (14) will be considered as a single survey unit. This unit was handling the same material as concentrate from Unit #8 which is below source material levels. It is therefore unaffected.

Survey Unit #10, Scavenger Spirals Feed Sump - Unaffected

The Scavenger Spiral Feed Sump (10) located on the 0' elevation of the Wet Mill received the tailings from the Rougher Spirals (4) via launders. The sump served as a buffer to provide a supply of material to the Scavenger Spirals (11). The launders from the Rougher Spirals (4), Scavenger Spiral Feed Sump (10), pump, and piping to the Scavenger Spirals (11) will be considered as a single survey unit. The scavenger spiral circuit (units 10 and 11) processed rougher tailings, which is lower concentration than the new feed. Unit #10 is therefore unaffected.

Survey Unit #11, Scavenger Spirals - Unaffected

The Scavenger Spirals located on the 24' elevation of the Wet Mill reclaimed heavy minerals from the depleted tailings of the Rougher Spirals (4). Heavy minerals were separated as before on the basis of particle density in two banks of twenty, five-turn spirals. The concentrate was returned to the Rougher Spirals Feed Sump (3) while the depleted tailings were passed to the Tails Transfer Sump (12). The Scavenger Spirals (11) will be considered as a single survey unit. The scavenger spirals are unaffected because they were used to process material which contained less monazite than the new feed ($\leq$ 180 ppm Th & U).

Survey Unit #12, Tails Transfer Sump - Unaffected

The Tails Transfer Sump located on the 0' elevation of the Wet Mill received the tailings from the Scavenger Spirals (11) via launders. The sump served as a buffer to provide a supply of material to the Tails Sump (28). The launders from the Scavenger Spirals (11), Tails Transfer Sump (12), pump, and piping to the Tails Sump (28) will be considered as a single survey unit. This unit served to pump the plant tailings (the light minerals) for disposal. Analysis showed the tailings to contain ≤ 120 ppm Th & U. Therefore, this unit is unaffected.

Survey Unit #13, Thickener Sump - Unaffected

The Thickener Sump (13), located on the 0' elevation of the Wet Mill received the depleted tailings from the Cleaner Spirals (6) via launders. The Thickener process step served to de-water the tailings slurry before returning the material to the Rougher Spirals (4). The launders from the Cleaner Spirals (6), Thickener Sump (13), pump, and piping to the Rougher Spirals (4) will be considered as a single survey unit. This unit was used to process material from the spiral circuit, which was below source material levels. Therefore, this unit is considered unaffected.

Survey Unit #14, Finisher Spirals - Unaffected

The Finisher Spirals (14) located on the 24' elevation of the Wet Mill further concentrated the product stream. Heavy minerals were separated as before on the basis of particle density in two banks of twenty, three-turn spirals. The concentrate was passed to the Table Spirals Sump (15) while the depleted tailings were returned to the Recleaner Spirals Feed Sump (7). The Finisher Spirals (14) will be considered as a single survey unit. The finisher spirals are considered unaffected because the finisher concentrate as well as all other streams remained below source material levels.

Survey Unit #15, Table Spirals Feed Sump - Unaffected

The Table Spirals Feed Sump (15) located on the 0' elevation of the Wet Mill received the concentrate from the Finisher Spirals (14) via launders. The sump served as a buffer to provide material to the Table Spirals (16). The launders from the Finisher Spirals (14), Table Spirals Feed Sump (15), pump, and piping to the Table Spirals (16) will be considered as a single survey unit. This unit is considered unaffected because the material it handled was below source material levels.

Survey Unit #16, Table Spirals - Unaffected

The Table Spirals (16) located on the 24' elevation of the Wet Mill further enriched the product stream. Heavy minerals were separated as before on the basis of particle density in two banks of eight, plastic, five-turn, double spirals. The concentrate flowed via launders to the Table Feed Sump (17) while the depleted tailings flowed via launders to the Screw Feed Sump (18). The Table Spirals (16) will be considered as a single survey unit.

Survey Unit #17, Table Feed Sump - Affected

The Table Feed Sump (17) located on the 0' elevation of the Wet Mill received the concentrate from the Table Spirals (16) via launders. The sump served as a buffer to provide material to the Main Tables (27). The launders from the Table Spirals (16), Table Feed Sump (17), pump, and piping to the Main Tables (27) will be considered as a single survey unit.

Survey Unit #18, Screw Feed Sump - Unaffected

The Screw Feed Sump (18) located on the 0' elevation of the Wet Mill received the tailings from the Table Spirals (16) via launders. The sump served as a buffer to provide material to the Screw Classifier (equipment removed). The launders from the Table Spirals (16), Screw Feed Sump (18), pump, and piping to the Screw Classifier (19) will be considered as a single survey unit.

Survey Unit #19, Screw Classifier - Unaffected

Equipment was removed early in the operation (prior to licensing) because it proved ineffective. During its use, it was part of the spiral circuit and was therefore unaffected.

Survey Unit #20, Screen Feed Sump - Unaffected

The Screen Feed Sump (20) located on the 0' elevation of the Wet Mill received the tailings from the Screw Classifier (19) via launders. The sump served as a buffer to provide material to the Magnet Feed Sump (21). The launders from the Screw Classifier (19), Screen Feed Sump (20), pump, and piping to the Magnet Feed Sump (21) will be considered as a single survey unit.

This unit is considered unaffected because it handled lower grade material from the spiral circuit.

Survey Unit #21, Magnet Feed Sump - Unaffected

The Magnet Feed Sump (21) located on the 0' elevation of the Wet Mill received the screened feed from the Screen Feed Sump (20). Screened particles were pumped to the Tails Sump (28). The Magnet Feed Sump served as a buffer to provide material to the High Intensity Wet Magnetic Separator (22). The piping from the Screen Feed Sump (20), Magnet Feed Sump (21), pump, and piping to the High Intensity Wet Magnetic Separator (22) will be considered as a single survey unit. The wet magnetic circuit was used to process tailings for the recovery of additional titanium values. It is therefore unaffected.

Survey Unit #22, High Intensity Wet Magnetic Separator - Unaffected

Tailings entering the High Intensity Wet Magnetic Separator (22) falls by gravity through a high density magnetic field where the sand particles are separated according to their magnetic properties. The magnetic fraction, containing any recovered titanium minerals, was transferred via launders to the Magnetics Feed Sump (23). The non-magnetic fraction, still containing the monazite, was transferred via launders to the Non-Magnetic Feed Sump (24). The High Intensity Wet Magnetic Separator (22) will be considered as a single survey unit. This unit is unaffected for the same reason as unit #21.

Survey Unit #23, Magnetics Feed Sump - Unaffected

The Magnetics Feed Sump (23) located on the 0' elevation of the Wet Mill received the magnetic sand, rich in titanium from the High Intensity Wet Magnetic Separator (22) via launders. The sump served as a buffer to provide material to the Stockpile. The launders from the High Intensity Wet Magnetic Separator (22), Magnetics Feed Sump (23), pump, and piping to the Stock Pile will be considered as a single survey unit. This unit was unaffected for the same reason as unit #21.

Survey Unit #24, Non-Magnetics Feed Sump - Unaffected

The Non-Magnetics Feed Sump (24) located on the 0' elevation of the Wet Mill received the non-magnetic sand, depleted in titanum and still containing the monazite, from the High Intensity Wet Magnetic Separator (22) via launders. The sump served as a buffer to provide material to the Table Scavenger Spirals (25). The launders from the High Intensity Wet Magnetic Separator (22), Non-Magnetics Feed Sump (24), pump, and piping to the Table Scavenger Spirals (25) will be considered as a single survey unit. This unit was unaffected for the same reason as unit #21.

Survey Unit #25, Table Scavenger Spirals - Unaffected

The Table Scavenger Spirals (25) located on the 24' elevation of the Wet Mill received material from the main table tailings stream. Heavy minerals were separated as before on the basis of particle density in two banks of twenty, five-turn spirals. The concentrate was passed to the Scavenger Table Feed Sump (26) while the depleted tailings were passed to Tails Sump (28). The Table Scavenger Spirals (25) will be considered as a single survey unit. The table scavenger spirals processed the low-grade rejects from the tables. These rejects contained little or no monazite. Therefore, this unit was unaffected.

Survey Unit #26, Scavenger Table Feed Sump - Unaffected

The Scavenger Table Feed Sump (26) located on the 0' elevation of the Wet Mill received the concentrate from the Table Scavenger Spirals (25) via launders. The sump served as a buffer to provide material to the Scavenger Tables (27). The launders from the Table Scavenger Spirals (25), Scavenger Table Feed Sump (26), pump, and piping to the Scavenger Tables (27) will be considered as a single survey unit. This unit is unaffected for the same reason as unit #25.

Survey Unit #27, Scavenger Table Separators - Affected

The Scavenger Table Separators (27), consisting of two separate units of three-stacked decks, performed another mechanical separation of the process stream. The sand slurry was washed with clean water over a series of vibrating, specially grooved and inclined tables, which further separated the particles on the basis of particle density. The heavier particles, including monazite, were contained in the concentrate stream. The concentrate was returned to the product stream via launders to the Table Feed Sump (17). Tailings (depleted in thorium and uranium) were passed via launder to the Screw Feed Sump (18). Middlings were recycled in the process step. The Scavenger Table Separators (27) and middlings recycling piping will be considered as a single survey unit.

Survey Unit #28, Tails Sump - Unaffected

The Tails Sump (28) located on the 0' elevation of the Wet Mill received the tailings from the Scavenger Spirals (11) via the Tails Transfer Sump (12) and plant process water from the various de-watering stages. The Tails Sump (28) served as the exit point for depleted material leaving the plant. The piping systems from the Tails Transfer Sump (12), Tails Sump (28), pump, and exit piping will be considered as a single survey unit. This unit is considered unaffected for the same reason as unit #12. It handled the rejects of the plant which were light minerals after the removal of heavy minerals, including monazite.

Survey Unit #29, Main Table Separators - Affected

The Main Table Separators, consisting of four separate units of three stacked decks, performed another mechanical separation of the process stream. The sand slurry was washed with clean water over a series of vibrating, specially grooved and inclined tables, which further separated the particles on the basis of particle density. The heavier particles, including monazite, were contained in the concentrate stream. The concentrate flowed through a series of launders to the Classifier Cyclone Feed Sump (30). Tailings (depleted in thorium and uranium) were passed via launder to the Screw Feed Sump (18). Middlings were recycled in the process step. The Main Table Separators (29) and middlings recycling piping will be considered as a single survey unit.

Survey Unit #30, Classifier Cyclone Feed Sump - Affected

The Classifier Cyclone Feed Sump (30) located on the 0' elevation of the Wet Mill received the concentrate from the Main Table Separators (29) via launders. The sump served as a buffer to provide material to the Hydro Classifier (31). The launders from the Main Table Separators (29), sump, pump, and piping to the Hydro Classifier (31) will be considered as a single survey unit. This unit was originally used in the dry mill as the monazite transfer sump (survey unit #43). It was subsequently relocated to the wet mill for this duty when the decision was made to receive the monazite in drums.

Survey Unit #31, Hydro Classifier - Affected

The Hydro Classifier (31) separated the concentrate on the basis of particle size to improve downstream process equipment efficiency and to return large, non-heavy minerals (largely deplete in thorium and uranium) to the Rougher Spirals (4) for further separation. The Hydro Classifier (31) will be considered as a single survey unit.

Survey Unit #32, Dryer Filter Feed Sump - Affected

The Dryer Filter Feed Sump (32) located on the 0' elevation of the Wet Mill received the concentrate from the Hydro Classifier (31) via launders. The sump served as a buffer to provide feed material to the Dry Mill process. The launders from the Hydro Classifier (31), Dryer Filter Feed Sump (32), pump, and piping to the Dryer (33) will be considered as a single survey unit.

Dry Mill Building

Survey Unit #33, Dryer - Affected

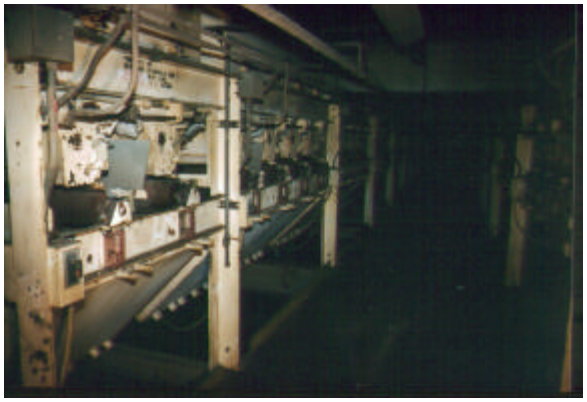
The concentrate from the Wet Mill enters the Dryer (33), located outside the Dry Mill, as a sand / water slurry. The slurry is separated in a Cyclone Dryer and filtered to remove the water before entering the Dryer (33). Water is recycled to the Wet Mill Screen Feed. The dry concentrate travels by gravity through a Dryer which heats the sand to 200°C before entering the Dry Mill at the 0' elevation. The hot sand was conveyed and distributed to the Rougher High Tension Separators (35) hoppers on the 28' elevation. The dryer (33), conveyor, elevator, and feed box hoppers on the Rougher High Tension Separators (35) will be considered as one survey unit.

Survey Unit #34, Flue Gas Scrubber - Unaffected

Hot gases from the Dryer (33) were exhausted through the Flue Gas Scrubber (34). The gases were cooled by a water spray and exhausted through the flue. Liquid water effluent was recycled to the Wet Mill Screen Feed (2). The Flue Gas Scrubber (34) will be considered as one survey unit. This unit is unaffected because monazite, a very high density mineral was not carried by the flue gases into the scrubber.

Survey Unit #35, Rougher High Tension Separators - Affected

Material entering the hoppers of the Rougher High Tension Separators (35) falls by gravity onto the surface of rotating cylinders where the sand particles are separated according to their conductive properties in a high tension electro-



static field. The non-conductive fraction, containing the monazite and zircon, is collected and conveyed to the Cleaner High Tension Separators (36). The conductive fraction (deplete in uranium and thorium) is conveyed to the Plate Separator (38) and the Middlings recycled to the up-stream side of the Rougher High Tension Separators (35). There are sixteen identical units in the bank of Rougher High Tension Separators (35) operating in parallel. All sixteen units will be considered as a single survey unit.

Survey Unit #36, Cleaner High Tension Separators - Affected

The particle separation process in the Cleaner High Tension Separators (36) is essentially identical to the previous separation process in the Rougher High Tension Separators (35). The non-conductive fraction, containing the monazite, is conveyed to the Recleaner High Tension Separators (37). The conductive fraction (deplete in uranium and thorium) is conveyed to the Plate Separator (38) and the Middlings are recycled to the upstream side of the Cleaner High Tension Separators. There are sixteen identical units in the bank of Cleaner High Tension Separators (36) operating in parallel. All sixteen units, conveyors, and elevators from the Rougher High Tension Separators (35) will be considered as a single survey unit.

Survey Unit #37, Re-Cleaner High Tension Separators - Affected

The particle separation process in the Re-Cleaner High Tension Separators (37) is essentially identical to the previous separation in the Cleaner High Tension Separators (36). The non-conductive fraction, containing the monazite, is conveyed to the Zircon Magnetic Separators (42). The conductive fraction is conveyed to the Plate Separator (38) and the Middlings (also deplete in thorium and uranium) are recycled in the same process step. There are sixteen identical units in the bank of Re-Cleaner High Tension Separators (37) operating in parallel. All sixteen units, conveyors, and elevators from the Cleaner High Tension Separators (36) will be considered as a single survey unit.

Survey Unit #38, Plate Separator - Unaffected

The conductive fraction (deplete in monazite) entering the Plate Separators (38) cascades by gravity through a series of specially designed plates. The non-conductive fraction (containing any monazite present in the depleted fraction from the High Tension Separators) is returned to the Rougher High Tension Separator (35) Elevator. The conductive fraction (further depleted in thorium and uranium) is conveyed to the Leucoxene Magnetic Separators (39). Middlings from the process are recycled in the same process step. The Plate Separator (38), conveyors, and elevators from the Zircon Magnetic Separators (42) will be considered as a single survey unit. This unit is unaffected because it only treated the conductive minerals (Ti minerals) and no monazite could have reached the unit.

Survey Unit #39, Leucoxene Magnetic Separator - Unaffected

The conductive fraction (deplete in thorium and uranium) from the Plate Separator (38) is conveyed to the Leucoxene Magnetic Separator (39). The sand fall by gravity through a series of cascading, rotating cylinders where particles are separated according to their magnetic properties in a high intensity magnetic field. The magnetic fraction is passed to the final Leucoxene product bins and the non-magnetic fraction (containing any scavenged monazite) is conveyed to the Finisher High Tension Separators (40). There are two identical units in the bank of Leucoxene Magnetic Separators (39) operating in parallel. Both units, conveyors, and elevators from the Plate Separators (38) will be considered as a single survey unit.

Survey Unit #40, Finisher High Tension Separators - Unaffected

The non-magnetic fraction from the Leucoxene Magnetic Separators (39) is conveyed to the Finisher High Tension Separators (40). The sand cascades by gravity through a series of mechanical veins and rotating cylinders where the sand particles are separated according to their conductive properties in a high tension electro-static field. The non-conductive fraction, containing any scavenged thorium and uranium, is returned to the Plate Separator (38) and the middlings recycled in the same process step. The conductive fraction, completely depleted of uranium and thorium, is conveyed to the Rutile Plate Separator (41). There are two identical units in the bank of Finisher High Tension Separators (40) operating in parallel. Both units, conveyors, and elevators from the Leucoxene Magnetic Separators (39) will be considered as a single survey unit. This unit processed the titanium circuit products only, which involved little or no monazite. It is therefore unaffected.

Survey Unit #41, Rutile Plate Separator - Unaffected

The conductive fraction (deplete in monazite) entering the Rutile Plate Separators (41) from the Finisher High Tension Separators (40) cascades by gravity through a series of electrostatically charged plates. The non-conductive fraction (containing any monazite present in the conductor fraction from the High Tension Separators) is returned to the Rougher High Tension Separator (35) Elevator. The conductive fraction is Rutile (deplete of thorium and uranium) which is conveyed to the product bins. Middlings from the process are recycled

in the same process step. The Rutile Plate Separator (41), conveyors, and elevators from the Finisher High Tension Separators (40) will be considered as a single survey unit. This unit is also unaffected because it treated only a high-titanium, low-monazite stream.

Survey Unit #42, Zircon Magnetic Separators - Affected

Material entering the hoppers of the Zircon Magnetic Separators (42) falls by gravity through a series of cascading, rotating cylinders where the sand particles are separated according to their magnetic properties in a high intensity magnetic field. The magnetic fraction of this process step is monazite, which contains the thorium and uranium. This material was conveyed to the Monazite Transfer Sump (equipment currently removed) where it was combined with water and pumped as a slurry to the Wet Mill Tails Sump (28). This material was later collected in drums and moved to the monazite pile located outside the Dry Mill. The non-magnetic fraction (deplete in uranium and thorium) is conveyed to the zircon sands storage bins. There are six identical units in the bank of Zircon Magnetic Separators (42) operating in parallel. All six units, conveyors, and elevators from the Re-Cleaner High Tension Separators (37) will be considered as a single survey unit.

Survey Unit #43, Monazite Transfer Sump - Affected

Monazite from the Zircon Magnetic Separator (42) was conveyed to the Monazite Transfer Sump (equipment currently removed) where it was combined with water and pumped as a slurry to the Wet Mill Tails Sump (28). This material was later collected in drums and moved to the monazite pile located outside the Dry Mill. The Monazite Transfer Sump (43) was relocated to the wet will and used in the table circuit when it was decided to receive the monazite sands directly into steel drums. This unit is the same as unit #30.

Survey Unit #*44*, Dry Mill Floor and Walls up to two (2) meters - affected

The concrete floor and lower walls of the Dry Mill will be surveyed as an affected area on a one square meter grid system to determine compliance with the release criteria.

Survey Unit #*4*5, Wet Mill Floor and Walls up to two (2) meters - Unaffected

The portion of the concrete and earthen floor and lower walls of the eastern half of the Wet Mill (excluding that portion beneath the ASARCO spirals, see discussion below) will be surveyed as an unaffected area on a 3x3 or 2x2 (wall grids only) meter grid system to determine compliance with the release criteria.

Survey Unit #*46*, Dry Mill Bag House - unaffected

Ventilation air was supplied to the Dry Mill by a series of open air fans. The circulating air in the Dry Mill was drawn through fiber bag filters and large particulate mater removed before exhausting to the outdoors. The bag house is located outside the Dry Mill and consists of four (4) identical filter units.

ASARCO Spirals - Unused

Approximately half of the area of the Wet Mill is occupied by about 1,500 separator spirals known as the ASARCO Spirals which were not used in the HMI separation process. These spirals were used by ASARCO to separate the raw, natural sands dredged from the original deposit. It was the tailings from these spiral separators that become the feed material for the HMI process. These spirals and the sumps servicing them remained unused since ASARCO stopped operations in 1982. They are therefore not included in this survey.

Appendix C

Process and Decommissioning History

Past Efforts:

Shortly after the final plant shutdown in August, 1990, both mills were subjected to a thorough cleaning and decommissioning as follows:

1. Wet Mill Building:

All equipment in the wet mill building which was in use in the project (whether affected or unaffected) was washed down with high-pressure water hoses and nozzles until no sand was visible on or around the equipment. The collection launders, which are the troughs underneath the spirals used to collect and convey the products were washed next using the high pressure water until all the sand was sluiced down to the sump-pumps on the ground floor. Since the shaking tables were the only "affected" equipment, i.e., they were the only processing equipment to have come in contact with source material, they were pressure washed a second time with the loose edges of the rubber lining lifted so that any sand that might have been entrapped under the lining may be washed off. The same treatment was applied to the launders attached to the table frames for product collection. The sand and water collected in the sumps and pumps were drained on the concrete floor, the sump tanks cleaned with the pressure hoses and the pump casings opened and washed with the high pressure water. The sand collected was transported to the monazite pile using shovels and wheelbarrows.

2. Dry Mill Building:

No water was used in the dryer or the dry mill building because of the electrical equipment present. Instead, high pressure air hoses were used to blow down the sand and dust from the equipment, structural steel, walls and other surfaces. Personnel involved in this activity used dust masks and film-badge monitors. The sand and dust collected on the ground floor were collected using vacuum cleaners and transported to the monazite pile.

Clean up of the mill buildings was performed by plant operators who were familiar with the equipment, the process and the buildings. The work was supervised by Tony Cuculic, then plant Chief Engineer and Radiation Safety Officer.

Following the clean up of the plant buildings, Tony Cuculic, as Radiation Safety Officer, performed a gamma survey of the plant buildings and selected pieces of equipment which were known to be "affected" due to the monazite concentration in the products which were in contact with the equipment. The gamma survey was conducted with a

Ludlum Model 19 micro R meter. In addition, "Fixed Contamination" measurements were made on representative pieces of affected equipment (wet tables, dryer and dry magnets) using an Eberline E120 c/w HP260 "Pancake probe". The same equipment was also subjected to smear testing for "Removable Contamination". Standard filter paper discs were used in the smears and were sent to Teledyne Isotopes for counting.

The above-mentioned surveys and smear tests were performed on January 28, 1991 to verify that the decommissioning work was complete and to reveal any areas that might require additional work. This phase of the work was not intended for submission to the NRC as a Final Status Survey, which was never done because, due to the presence of the monazite pile, the site was not ready for final release.

Unaffected Buildings:

In addition to the two plant buildings there are five other buildings on the site. Namely, the laboratory, the change house, the maintenance building, the warehouse and the main office. All five building are considered "unaffected" because of the fact that monazite-rich products (source material) were never handled or present in any of these buildings. Source-material grade sand was not sampled or analyzed in the laboratory. The maintenance building was not used to repair any of the affected process equipment. Such equipment was maintained and repaired on location in the plant buildings.

Process History and Origin of the Monazite Pile:

Following is a detailed historical description of the entire process, starting from the beginning of the original mining carried out by Asarco prior to the inception of HMI.

ASARCO Operation

The site was operated by ASARCO, Inc. between 1973 and 1982. The operation consisted of hydraulic mining (dredging) of the sand deposits and processing those sands to extract the titanium mineral ilmenite. The mineral composition of the sand deposits at the site were ascertained by earlier geological and mineralogical studies conducted by ASARCO. The deposits contained approximately 95% silica (common sand) and 5% heavy minerals. There are many mineral constituents in the deposits that are heavier than silica, which is why they are called heavy minerals. Ilmenite is the predominant heavy mineral, followed by zircon, kyanite, sillimanite, rutile, staurolite, tourmaline and monazite. Monazite is the mineral that contains thorium and uranium which cause the radioactivity in the deposits.

The following is a description of ASARCO's process, which is also illustrated in Figure 6:

1) At the very beginning, since there was no pond for the dredge, one was created by removing the top soil and sufficient sand using a dragline. The material so removed was stockpiled in a location west of the railroad tracks.

2) The dredged sand was pumped to a screening barge where large roots, clay balls and gravel were removed from the sand. The dredging rate was about 1,200 tons per hour.

3) The screened sand was pumped, still in slurry form, to a land-based concentrating plant consisting of a wet mill and a dry mill. The slurry went first to the wet mill wherein the heavy minerals were concentrated using spiral separators known as Humphreys spirals. The wet mill tailings, consisting primarily of silica sand and water were pumped back to the dredge pond as back-fill of the mined-out areas. At the start of dredging, there was no place to back fill in the newly created dredge pond. Therefore, the wet mill tailings were stored west of the railroad tracks in the same location as the top soil removed by the dragline. This practice created a pile of roughly one million tons of material consisting of top soil and wet mill tailings. This pile is being referred to as Asarco wet mill tailings or old tailings. Based on its history, the radionuclide concentration of this pile is below the natural background concentration of the area. The heavy minerals followed a different path down the spiral and were dewatered and stockpiled outside the wet mill. Approximately 50 tons per hour of heavy-mineral concentrate were produced.

4) A great deal of wash water was used to assist the separation on the spirals and to wash away the fine clay which coated the mineral particles. The excess wash water and suspended clay were decanted off using large holding tanks (sumps) before pumping the sand.

5) The clay-laden water was pumped to a series of large-area settling ponds (about 10 acres) on the north side of the wet mill. The clay was allowed to settle out and the clarified water was recycled to the wet mill. This is the area which is now known as the "Blue Area". The reference came from the color-coded map which was presented to the US NRC by Heritage Minerals during licensure in 1990.

6) It should be noted that the monazite concentration was increased by the ratio of 24:1 as a result of going through the wet mill and concentrating the heavy minerals from 1,200 tons to 50 tons.

7) The heavy mineral concentrate was allowed to drain for several days then transferred to a 200-ton storage silo.

8) Using a disc feeder at the bottom of the storage silo and a conveyor belt, the heavy mineral concentrate was fed to an oil-fired rotary dryer wherein the heavy mineral sands were completely dried and heated to about 300 degrees F.

9) The heated sand was conveyed to the dry mill which contained high-tension electrostatic separators and high-intensity magnetic separators.

10) The ilmenite was separated from the other heavy minerals using the high-tension separators which take advantage of the difference in electrical conductivity among minerals. Ilmenite, which was the desired titanium mineral, is electrically conductive. All the other heavy minerals in the concentrate are non-conductors.

11) The conductor product was then fed to the high-intensity magnetic separators for final cleaning of the ilmenite which was then placed in storage bins pending shipping to customers by rail or truck. About 30 tons per hour were produced.

12) The non-conductor rejects from the high tension separators were referred to as the Dry Mill Tailings. They were mixed with water and pumped to a storage area east of the mill. This is the area now referred to as the "Gray Area".

13) The Dry Mill Tailings, at about 20 tons per hour, contained virtually all the monazite that was contained in 50 tons of heavy minerals concentrate. Therefore the concentration of monazite was increased by the ratio of 2.5:1 relative to the heavy mineral concentrate. Since this is also the monazite that was contained in 1,200 tons of dredge output, it can be concluded that the monazite and its contained thorium and uranium were concentrated by a factor of 1,200:20, or 60:1 above original deposits. A sample of the Dry Mill Tailings was analyzed by the US NRC during an inspection of the Heritage operation in January, 1988. It was found that the ASARCO Dry Mill Tailings (later referred to as the New Feed by Heritage) contained 180 ppm (parts per million) thorium plus uranium (Th+U). Approximately one million tons of Dry Mill Tailings were accumulated in the Gray Area during the ASARCO operation.Based on the above, it is estimated that the unprocessed sand deposits contained about 3 ppm Th+U (180/60=3).

14) ASARCO had planned to process the Dry Mill Tailings at a later date for the extraction and sale of zircon and monazite. Extensive laboratory and pilot-plant testing was performed by ASARCO on the recovery of zircon and monazite. However, deteriorating market conditions caused ASARCO to discontinue all operations at the site in 1982 and sold the property to Heritage Minerals, Inc. in 1986.

Heritage Minerals Operation

After the property was purchased by Heritage in 1986, the plant facilities were leased to Mineral Recovery, Inc. MRI ran additional laboratory and pilot-plant tests for the recovery of zircon and additional titanium minerals left behind by ASARCO, but not monazite which was to remain a part of the Dry Mill Tailings. The test work was conducted at Hazen Research of Golden, Colorado.

Based on the results of the test work and Hazen's recommendations the plant was modified and additional equipment was purchased. The plant started operation in October, 1986. In August, 1987 MRI's lease was terminated and Heritage Minerals took over the operation until August of 1990 when all production stopped. The operating period between October, 1986 and August 1987 (MRI's operation) was mostly a plant break-in and tune-up period during which actual production was minimal. As a result, the bulk of the zircon and titanium values in the New Feed remained in the tailings during this period.

The following is a description of the Heritage plant operation, which is also illustrated in Figure 7:

1) The ASARCO Dry Mill Tailings located in the Gray Area, which will now be referred to as the New Feed for the zircon plant, were mixed with water and pumped to the wet mill at the rate of 50 tons per hour.

2) The slurry was processed over Humphreys spirals to remove any remaining silica sand and some of the aluminum minerals. Although the aluminum minerals are considered heavy minerals, they are considerably lighter than zircon, monazite and titanium minerals. As such it was possible to reject some of those aluminum minerals on the Humphreys spirals. Little or no zircon or monazite were lost in the spiral tailings. Some titanium losses were incurred, however, due to the presence of low-density, weathered ilmenite. The spiral tailings were collected in a large holding tank (sump) and pumped to the area north of the wet mill which was occupied by the clay settling ponds during ASARCO's operation (the Blue Area).

3) The spiral concentrate was dewatered using a vacuum filter then dried and heated to 300 degrees F in an oil-fired rotary dryer, similar to the one used by ASARCO but much smaller.

4) The dry, heated sand was fed to the first section of the dry mill (the Ti circuit) where the titanium minerals were separated using high tension machines. The primary titanium mineral recovered was leucoxene, which is a transition mineral between ilmenite and rutile. Leucoxene is a conductor as are ilmenite and rutile, and hence could be separated using high-tension machines.

5) The conductor product from the high-tension separators was cleaned using high-intensity magnetic separators to produce market-grade leucoxene. Because there is a certain degree of imperfection in any separation process, some zircon and monazite remained with the leucoxene. As a result, the leucoxene product, when analyzed by NRC, was found to contain 140 ppm Th+U. This was well below any regulatory or safety concerns and was acceptable to the customers.

6) The non-conductor product from the high-tension separators contained the zircon, monazite and the remaining aluminum minerals. It was reslurried with water and pumped back to the wet mill.

7) In the wet mill, the non-conductors were fed to a hydraulic classifier and then shaking tables, which were used to reject the remaining aluminum minerals. The table tailings were combined with the spiral tailings in the same holding tank, and were pumped together to the Blue Area.

8) The table concentrate was dewatered on a vacuum filter then dried and heated in a second oil-fired rotary dryer.

9) The dry, heated table concentrate was conveyed to another section of the dry mill (the zircon circuit) where it was treated on high-tension machines to remove any remaining traces of titanium minerals. Those were collected as conductors and returned to the Ti circuit.

10) The non-conductor product from the high-tension machines contained the zircon and monazite plus traces of aluminum minerals. The non-conductors were then fed to

high-intensity magnets to remove magnetic minerals (monazite, staurolite and tourmaline) and thus produce market-grade zircon for sale to customers. Once again, because of the nature of the separation processes, some monazite remained in the zircon product. A sample of zircon was also taken and analyzed by NRC and found to contain 350 ppm TH+U. This was again below the regulatory threshold of 500 ppm set by NRC for "Source Material" requiring licensing. The Th+U content of the zircon was also below the specifications set by customers.

11) The magnetic product, which contained the monazite, was mixed with water and pumped back to the wet mill where it was combined with the spiral tailings and the table tailings in the holding tank to make up the plant tailings that were pumped to the blue Area. When analyzed by NRC along with the other materials, the combined plant tailings were found to contain 120 ppm Th+U, which is less than the 180 ppm that was found in ASARCO's dry mill tailings (Heritage's New Feed). The decrease in Th+U concentration is explained by the loss of monazite to both the zircon and leucoxene product. The analyses show that the Heritage operation resulted in a net improvement in the radiological condition of the site when compared with what it was at the end of ASARCO's operation and before the property was purchased by Heritage. While these numbers are one-time analyses of single samples, they represent the correlation amongst the various products, since all the samples were taken at the same time.

12) The ASARCO Dry Mill Tailings in the Gray Area (the New Feed) were exhausted at the end of February, 1990. At that time, Heritage decided that sufficient zircon and leucoxene had remained in the plant tailings in the Blue Area, especially during MRI's initial operation period, to warrant the recycle of those tailings through the plant for a second round of processing to extract additional zircon and leucoxene products. This was started in March, 1990 and became known as Phase II of the operation.

13) Some minor variations on the above-described process were tested and incorporated in the plant operations in the efforts to improve product quality and yield. For example,additional stages of spirals were added to improve silica and alumina rejection. Another variation, which was incorporated to reduce fuel consumption, was eliminating the second rotary dryer and processing the spiral concentrate directly on the shaking tables prior to processing in the dry mill. A third variation, which was dictated by NRC during the licensing process, involved isolating the monazite-rich magnetic product in a separate holding area rather than combining it with the other tailings. When that practice started, the mill tailings were no longer pumped to the Blue Area but were sent to a separate area east of the wet mill. The monazite-rich magnetics were stored separately in an area southeast of the dry mill. This is the area known as "the Monazite Pile".

14) The above-mentioned variations were incorporated at the start of reprocessing of the plant tailings (phase II) in March, 1990. In August, 1990, after about 200,000 tons of tailings were reprocessed through the plant, Heritage decided to terminate all operations due to the economic downturn which resulted in reduced demand and prices for the plant products.

15) During the final 30 days of operation, the monazite-rich sand was stored in 55-gallon steel drums instead of being pumped to the monazite pile. This was in anticipation of shipping the monazite off site to another processing facility.

The reprocessing of the 200,000 tons of Blue Area tailings during which the monazite was isolated in the Monazite Pile resulted in further improvement in the condition of the site through producing about 150,000 tons of tailings that were virtually monazite free . These tailings were stored separately in an area east of the Blue Area and north of the Gray Area. As a consequence of this practice, approximately 695 cubic yards (1,400 tons) of monazite-rich product were generated and are stored in the Monazite Pile. The Monazite Pile, as well as the plant buildings, are under the control of the NRC according to the terms of License No. SMB-1541. Figure 8 is a schematic of phase II of the plant operation.

APPENDIX D