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ALCOA MASSENA OPERATIONS

DESCRIPTION OF

SOLID WASTE DISPOSAL FACILITY

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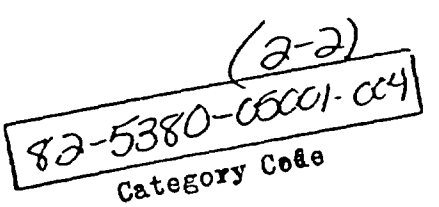
ENVIRONMENTAL CONTROL SUPERINTENDENT



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ALCOA MASSENA OPERATIONS: DESCRIPTION OF SOLID WASTE DISPOSAL FACILITY

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I. METHODS OF DISPOSAL

The Massena Operations of the Aluminum Company of America located in the Town of Massena, County of St. Lawrence, (see attached print-Drawing B-086592-JM), produces primary aluminum (SIC 3334), aluminum ingot (SIC 3361), aluminum wire, rod and bar (SIC 3354 and 3355), wire and insulated aluminum conductor (SIC 3357), and aluminum conductor accessories (SIC 3361 and 3644). Most waste materials either associated with or produced by the manufacture of these products are recycled, sold or disposed of on Alcoa property contiguous to the plant site. The primary method of disposal is landfill.

The disposal areas are:

Area No. 1	Main Landfill
*Area No. 2	Soluble Oil Lagoon
**Area No. 3A	Heavy Oil and Sludge
Area No. 4	Potlining Pile (old)
Area No. 5	Potlining Pile (new)

These areas are located on the following drawings in the Appendix:

B-086592-JM - Alcoa Massena Property Superimposed on New York State Quadrangle Maps

B-105209-JM - Topographic Map showing Alcoa Massena Waste Disposal Sites

*Discontinued use of waste lub oil lagoon 1980 April 18.
**Closed Area No. 3 1979 November 13

Wastes requiring special handling are disposed of as follows:

Waste lubricating oils are accumulated in tanks. An as yet unknown amount will be used as fuel for an aluminum chip dryer and steam boilers. Any excess will be disposed of through either approved commercial reprocessors or waste disposal facilities. Water mixtures of soluble oil are held in an evaporation pond.

Used capacitors, PCB-contaminated solids, PCB-contaminated mineral oil and phosphate ester hydraulic fluid are stored in a facility that complies with EPA regulations. The solids will be disposed of in approved commercial disposal facility. Liquids containing 500 ppm or more of PCB's will be incinerated in an approved incinerator. Liquids containing less than 500 ppm PCB's will be burned on site in a high energy boiler equipped for proportioning of the fuels and for monitoring CO and excess oxygen.

As of 1980 April 28 sludge from solvent degreasers and materials containing asbestos are collected in 55-gallon drums. When a drum is filled, it is closed and sent to a storage area to be held for disposal in an off-site approved facility.

Sludge consisting of calcium fluoride, excess lime and carbon particles accumulate in a two-acre wastewater treatment lagoon at the approximate rate of two tons per day. The lagoon was dredged during 1977. The sludge was deposited in containment areas in the vicinity of the lagoon with provision for dewatering. The same procedure will be followed in the future.

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II. OPERATION OF DISPOSAL FACILITIES

Area No. 1 - Main Landfill

All solid waste that does not require special handling is disposed of in the Area No. 1 landfill dump. Reusable lumber and wooden reels are accumulated in one area and held for sale. Once a year, all clean lumber on hand is burned under permit from the DEC.

Miscellaneous waste (see Table 1 in Appendix for description) is accumulated in Dempster-Dumpster boxes that are located in all areas of the Operations. Office and lunch room waste, with few exceptions, are contained in plastic bags. The full boxes are transferred to the dump daily five days a week. Some miscellaneous waste is collected in open boxes designed for handling with fork trucks. The waste in these boxes is loaded into dump trucks for transfer to the dump. Scrap bricks from production facilities and earth and concrete from construction projects are hauled to the dump in dump trucks.

Once a week the active area of the dump is leveled with a bulldozer. Clean fill is added if necessary, but generally there is enough siliceous material in the waste to form a solid cover.

The land in this area is predominately grey clay. Percolation tests of the soil in this area made in 1960 resulted in zero percolation. There are no wells in the area because all water for plant usage comes from Lake St. Lawrence. The nearest known private wells are along the Dennison Road, approximately 6000 feet away in a northerly direction.

Area No. 2 - Oil Lagoons

A lagoon adjacent to Area No. 1 landfill is utilized for disposal of used soluble oil. The lagoon has a surface area of 125,000 square feet to promote evaporation and has a capacity in excess of 5,000,000 gallons.

Approximately 600,000 gallons of soluble oil and water used in rolling mills and saws are discarded annually. Spent caustic and acid solutions from aluminum etching facilities and wax emulsions are also disposed of in this lagoon. These solutions amount to approximately 500,000 gallons per year. These volumes plus rainfall exceed evaporation. To prevent overflows, the excess water is pumped into a nearby 60 acre polishing lagoon that is part of a wastewater treatment facility for which there is a NPDES discharge permit.

The concentration of oil and grease in the wastewater discharge is well below the permit limit for daily and monthly averages.

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Area No. 3 - Landfill

A twenty-five foot deep ravine in the vicinity of Dennison Road was used for disposal of heavy oils, oily waste, and sludges. The 800 foot ravine was formed by material dredged from the Grasse River. It is screened from view from Dennison Road by a grove of trees and is approximately 2500 feet from the nearest residence, which is to the north on Dennison Road.

Most of the materials disposed of in the ravine come from the reservoirs associated with wire drawing machines and rolling mills. These reservoirs are pumped down and cleaned out, usually twice a year. The residue in the bottom is loaded into steel drums and dumped into the ravine. Oily waste from cleanup of the mills is also disposed of in the ravine. The drums of waste are covered with clean earth from the banks of the ravine once a month except during the winter months. Drums dumped during the winter are covered as soon as weather permits.

Approximately 10,000 gallons of oily sludges are discarded annually. The oil component is soluble oil, mineral oil and polybutenes. The solids are aluminum and steel fines, waxes, dirt and absorbent.

This area was closed effective 1979 November 13 and a new area opened within the plant fence. During August of 1979 Atlantic Testing Laboratories was retained to conduct subsurface soil investigations and to install monitoring wells at the old and new sites. The following section outlines these activities and operating and monitoring procedures to be followed:

A. Closure of Area No. 3: Heavy Oil and Sludge

Subsurface Investigation

During August of 1979 Atlanctic Testing Laboratories conducted a subsurface investigation of the soil in the area and installed a ground water monitoring well at the northeast end of the site. See attached Report No. CD33-1-8-79.

Closure Procedure

The ravine was formed by two parallel deposits of dredge spoils from the Grasse River. Soil from these deposits,in general, a silty sand with varying proportions of clay and gravel was used to close the site. Grading operations proceeded south to north. Before filling of the ravine was completed, oil and water was pumped into a tank truck and transferred to Area No. 2, Waste Lub Oil Lagoon. After filling was completed, a 12-inch diameter stand pipe 20 feet long was installed in the north end of the ravine. The lower end of the pipe was perforated over a distance of about a foot.

This work was done during November of 1979. Final grading was not completed because of unfavorable weather.

During May of 1980 the site will be graded to provide good surface drainage away from the landfill. The site then will be mulched and seeded. The cover of clean soil over the waste material will range from ten to fifteen feet.

Monitoring

Sample monitor well annually and analyze for oils and greases, PCBs, Ca, Mg, Na, NH_4, SO_4, CO_3,/HCO_3 and No_3.

Sample monitor well quarterly and analyze for oils and greases and PCBs until trends are established. Program will be revised accordingly.

Check stand pipe quarterly for oil until assured that there is no migration of oil in the site.

B. Opening of Area 3A: Heavy Oil and Sludge

Geotechnical Investigation

Atlantic Testing Laboratory was retained to select a suitable site within the fenced area of Massena Operations. See attached Report No. CD33-2-10-79 and Drawing No. B-105209-JM for location of site and results of the investigation. Included in the report are subsurface data and details of the four ground water monitoring wells that were installed.

C. Operating Plan for Area No. 3A

Site Plan

See Drawing No. A-107870-JM for layout of site.

Pit I was completed November of 1979. It is 40' x 45' in plan and 13' deep. The bottom elevation at 263' is approximately 19' above the permanent ground water table.

The pits will be dug in numerical sequence. Not shown on the drawing is a dewatering trench located in the expansion area across from Pit I. The depth of this trench is limited to depth of soil of approximately 1×10^{-5} centimeters per second permeability.

Operating Plan

The waste will be covered twice a year, once during May and again in October or November depending upon the weather. Before covering, the pit will be dewatered. A bulldozer will be used for covering and compacting. Approximately a foot of earth cover will be placed over the open, crushed drums.

Two or more lifts will be made before final closure. Approximately three feet of glacial till (hard pan) from the pit being opened will be used for capping. The closed pit sites will be graded with top soil and seeded.

The projected time schedule for pit life follows:

Pit No.	Eff. Vol., Cu. Yds.	Operable Period	Closure Date
Pit I	900	79/11/15-81/07/31	Approximately one week
Pit II	900 - 1000	81/08/01-83/06/30	will be required for
Pit III	900 - 1000	83/07/01-85/06/30	opening a new pit and
Pit IV	900 - 1000	85/07/01-87/06/30	closing old pit between operable periods.

Description of Waste

The following substances are used as lubricants or as additives to lubricants:

Mineral Oil	Cetyl Alcohol
Polybutene	Petroleum Sulfonate (Emulsifier)
Lard Oil	Amines, (Corrosion Inhibitor)
Vegetable Oil	Metallic Salts (Corrosion Inhibitor)
Butyl Stearate	Of Fatty Acid
Graphite	Kerosene
Oleic Acid	Varnolene
	Grease

Monitoring

Sample monitor wells annually and analyze for oils and greases, PCBs, Ca, Mg, Na, NH_4, SO_4, CO_3/HCO_3 and No_3.

Sample monitor wells quarterly and analyze for oils and greases and PCBs until trends are established. Program will be revised accordingly.

Areas No. 4 and 5

Approximately 2900 tons of used potlinings are disposed of annually in outdoor piles. In 1976 October covering of the then existing pile (Area No. 4) with one foot of compacted earth was begun and a new pile was started at Area No. 5. Covering of the old pile was completed, including seeding and mulching, during July of 1977.

The new pile is located near the top of a wooded ridge in a two-acre site with extensive adjacent land for dispersion of leachate.

III. REQUEST FOR VARIANCES

Variances are being requested from certain requirements of Part 360 that would increase disposal costs significantly without benefit to the safety, health or environment of the people of the State of New York.

No variance is requested from Section 360.8 (a) because of the belief that the intent of all requirements is being met.

Variance from the following requirements is requested for the areas specified.

Section 360.8 (b)(1)(vii) (a) through (e) Areas No.1 and No.3

Area No. 1: Compliance with requirements (a), (b), (c) and (d) would require a full time operator. No adverse effects with respect to vectors, dust or odors have resulted from the existing practice of leveling the waste deposited at least once a week because of the physical characteristics of the wastes and because the wastes predominately are inert chemically and biologically. Most loose papers and the small amount of putrescible waste (see description of miscellaneous waste in Table I of the Appendix) present generally are contained in plastic bags. Evidence of the small quantity of putrescible waste is the limited number of sea gulls observed at the site.

A covering of six inches over each day's waste spread in two-foot layers would reduce the life of the site twenty-five percent. Intermediate covering would further reduce the life of the site. Furthermore, Alcoa has no plans

for development of this area because of its location between production centers and because of utilization of the adjacent land for disposal of sanitary wastes, oils and wastewater treatment.

Existing practice requires sufficient cover to provide for the safety of personnel and equipment handling solid waste.

Area No. 3: The disposal of heavy oils and sludges in 55 gallon drums requires special handling that does not conform entirely to these requirements, but the existing practice is consistent with the intent of the requirements. Utilizing this ravine as a landfill serves to level the area and thereby reclaim it for future use of a higher value.

Section 360.8 (b)(1)(xi) Area No. 1

Area No. 1: Permission is requested to continue to dispose of wastes containing asbestos in Area No. 1 as described in Section II of this report. This procedure contains the asbestos fibers and prevents them from becoming air borne and from entering ground or surface water. In this condition, asbestos is a non-hazardous industrial waste.

Section 360.8 (b)(3) Industrial Waste Disposal Facilities
Areas No. 2, No. 4 and No. 5

Area No. 2: The oils and caustic and acid solutions disposed of in the oil lagoons are industrial wastes. The methods used for disposal of these substances protect the environment from harm and provide for reclamation of the reusable oils. Specific cover and compaction requirements for a sanitary landfill as stated in Section 360.8 (b)(1)(vii) (a) through (e) are not compatible with this operation; therefore, a variance is requested from these requirements.

Areas No. 4 and No. 5: Area No. 4 was closed in 1977 as a site for the storage of dug potlinings in the manner described in Section II of this report. The seeded earth cover will be maintained to assure good drainage and the development of a continuous sod. No intermediate covering is planned for the new site. As

indicated in Section II of this report, this site is isolated with a large wooded land area adjacent to it. Dug potlining when exposed to the elements is free of dust, vectors and obnoxious odors. Covering during the active life of this site would serve no useful purpose in this isolated area and would retard weathering and disintegration of the chunks of potlining.

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IV APPENDIX

TABLE I

DESCRIPTION AND ESTIMATED VOLUME OF WASTE
DISPOSED OF ANNUALLY IN AREA NO. 1 LANDFILL

Loads/Week	Description	Cubic Yards Per Year Compacted
240 3-yard Boxes	* Miscellaneous Waste	18,700
14 8-yard Dump Trucks	* Miscellaneous Waste	3,900
11 8-yard Dump Trucks	Scrap bricks	3,400
70 Wooden Reels	Total number scrapped per week	-
1 3-yard Box	Foundry Sand	120
	Demolition and Construction Debris	No estimate
	Baghouse dust/handling of skim from molten aluminum	20
1 3-yard Box	Marinite and asbestos scrap	60
1 3-yard Box	Aluminum fines	60

* Miscellaneous waste consists of:

85% paper and wood products (packaging materials), wood pallets, wood chips and sawdust, and lunch area and office refuse that consists of paper towels and containers made from paper, steel and glass, and food scraps estimated at less than 1% of volume.

15% other materials such as: Steel (banding, drums, broken parts, turnings and cuttings), slag from cast iron melting furnaces, floor sweepings, carbon dust, polyethylene (sheet, bags, reels), fabric bags from dust collectors (orlon and cotton).