

Prepared for:



Omni Waste of Osceola County, LLC.

1501 Omni Way
St. Cloud, Florida 34773

OPERATION PLAN

J.E.D. SOLID WASTE MANAGEMENT FACILITY

Prepared by:

Geosyntec

consultants

13101 Telecom Drive, Suite 120
Temple Terrace, Florida 33637
Authorization Number: 4321
Project Number FL2621

30 June 2015





Craig R. Browne, P.E.
Florida Registration No. 68613
Date: 7/16/2015

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Terms of Reference	1
1.2	Purpose and Scope of the Operation Plan	1
1.3	Operation Plan Organization	1
2	LANDFILL PERSONNEL AND FACILITIES	2
2.1	Personnel Requirements	2
2.1.1	Numbers and Types	2
2.1.2	Employee Training	2
2.2	Landfill Entrance Procedures	3
2.2.1	Hours and Days of Operation	3
2.2.2	Processing Customers	4
2.2.3	Public Use	5
2.2.4	Vehicle Inspection	5
2.3	Traffic Routing	5
2.3.1	Access Points/Signs	5
2.3.2	On-Site Traffic Flow	5
2.4	On-Site Structures	6
2.5	Communication Facilities	6
3	LANDFILL OPERATIONS	7
3.1	Basic Landfilling Procedures	7
3.1.1	Method of Operations	7
3.1.2	Working Face Practices	8
3.1.2.1	Start-Up and First Lift	8
3.1.2.2	Subsequent Lifts	8
3.1.3	Filling Procedures	9
3.1.3.1	Width of Working Face	9
3.1.3.2	Unloading	10
3.1.3.3	Pushing, Spreading, and Compacting	10
3.1.3.4	Daily Clean-Up	11
3.1.4	Cover	11
3.1.4.1	Stockpiling	11
3.1.4.2	Application and Phasing of Cover Materials	11
3.2	Equipment	12
3.2.1	Primary Equipment	12

3.2.2	Back-Up Equipment.....	12
3.2.3	Support Equipment	12
3.2.4	Equipment Care.....	13
3.3	Roads.....	13
3.3.1	Road Construction.....	13
3.3.2	Maintenance of Roads.....	13
3.3.2.1	Filling of Potholes	13
3.3.2.2	Grading.....	13
3.3.2.3	Restoring Settlement	14
3.3.2.4	Cleaning of Public Access Roads	14
3.3.2.5	Removal of Materials from Landfill Roadways.....	14
3.3.2.6	Maintenance of Drainage Swales.....	14
3.4	Drainage Features.....	14
3.5	Salvaging/Recycling.....	15
4	ENVIRONMENTAL CONTROLS	16
4.1	Environmental Control Systems.....	16
4.1.1	Leachate Containment and Control.....	16
4.1.2	Surface Water Controls	16
4.2	Facility Inspection Plan.....	17
4.2.1	Leachate Collection System (LCS).....	17
4.2.2	Leachate Storage Facility	17
4.2.3	Surface Water Control System.....	17
4.2.4	Landfill Cover System	18
4.2.5	Facility Inspection Schedule	18
4.3	Facility Maintenance Plan	19
4.3.1	Leachate Collection System.....	19
4.3.2	Surface-Water Control System	19
4.3.3	Final Cover Maintenance	19
4.4	Water Quality Monitoring Plan.....	20
4.5	Landfill Gas Monitoring Plan	20
4.5.1	Monitoring of On-Site Buildings	21
4.5.2	Monitoring for Landfill Gas Along Property Boundary	21
4.5.3	Monitoring for Objectionable Odors at the Property Boundary	21
4.5.4	Detecting Exceedances of the Regulations	22
4.6	Landfill Active Area Controls.....	22
4.6.1	Litter Control.....	22
4.6.1.1	Prevention of Litter on the Working Face.....	22

4.6.1.2	Control of Litter with Litter Fences	22
4.6.2	Buffer Maintenance.....	23
4.6.3	Dust Control	23
4.6.4	Vector Control.....	23
4.6.5	Noise Control	24
4.6.6	Recordkeeping	24
5	EMERGENCY CONTINGENCY PLAN	26
5.1	Introduction	26
5.2	Fire Control Plan	27
5.2.1	When Fire Occurs	27
5.2.2	"Hot Load" Procedures	27
5.2.3	Fire Extinguishers and First Aid Kits.....	28
5.3	Accident or Injury	28
5.3.1	When an Injury Occurs	28
5.3.2	Procedures After an Accident	29
5.4	Release of Contamination to Environment (Remedial Response)	30
5.4.1	Response	30
5.4.2	Follow-Up	30
5.5	Hazardous or Other Unauthorized Materials	31
5.5.1	The Observer.....	31
5.5.1.1	Known or Suspected Hazardous Material.....	31
5.5.1.2	Other Unauthorized Material	31
5.5.2	Landfill Site Manager	32
5.5.3	Non-Discharged Load	32
5.6	Uncooperative Customers	32
5.7	Inclement Weather	33
5.7.1	Operation in Wet Weather	33
5.7.2	Preparation for Inclement Weather	33
5.7.3	Preparation for Severe Weather or Hurricanes	34
5.8	Problems Affecting the Leachate Collection and Removal Systems	35
5.8.1	Interruption of Power Service to the Landfill	35
5.8.2	Interruption of Flow to Leachate Storage Facility	35
5.8.3	Primary Leachate Sump Alarm Level Switch.....	35
5.8.4	Managing Hazardous Leachate	36
6	SAFETY PLAN	37
6.1	Emergency Procedures	37

6.2	General Safety Practices.....	37
6.3	Safety Equipment	38
6.4	Site User Rules	38
7	FINAL CLOSURE	40
7.1	Introduction	40
7.2	Final Cover System Components	40
7.3	Seeding and Planting	40
7.4	Erosion Minimization.....	41
7.5	Drainage	41
8	BORROW AREA OPERATIONS	42
8.1	Overview	42
8.2	Wet Excavation	42
8.3	Dry Excavation.....	43

LIST OF TABLES

Table 1	Personnel Requirements.....	44
Table 2	Heavy Equipment Requirements ⁽¹⁾	45
Table 3	Heavy Equipment Rental Companies.....	46
Table 4	Operator Protective Equipment.....	47

APPENDICES

APPENDIX A:	TRAINING PLAN
APPENDIX B:	WASTE INSPECTION PLAN
APPENDIX C:	EMERGENCY RESPONSE AGENCIES
APPENDIX D:	OPERATION AND MAINTENANCE PLAN FOR LEACHATE RECIRCULATION
APPENDIX E:	WASTE SOLIDIFICATION OPERATION PLAN
APPENDIX F:	LFGTE FACILITY OPERATION PLAN
APPENDIX G:	WASTE TIRE STORAGE AND PROCESSING PLAN

1 INTRODUCTION

1.1 Terms of Reference

This Operation Plan has been prepared by Geosyntec Consultants (Geosyntec) on behalf of Omni Waste of Osceola County, LLC (Omni) for a Class I landfill known as the J.E.D. Solid Waste Management (JED) facility. The Operation Plan for the JED facility has been prepared to comply with the requirements of Chapter 62-701 of the Florida Administrative Code (FAC).

1.2 Purpose and Scope of the Operation Plan

The Operation Plan provides a detailed description of the daily operations at the JED facility, including contingency operations as required by Sections 62-701.320(7)(e)(1,2), and 62-701.500 of the FAC. The primary purpose of the Operation Plan is to describe the framework to operate and manage the JED facility so that the landfill is operated and maintained in a condition that protects the public health and the environment. This Operation Plan also provides a description of borrow area operations for obtaining fill material during both the construction and operation phases of the landfill.

1.3 Operation Plan Organization

The organization of the Operation Plan is described below:

- Section 2 describes personnel requirements, landfill entrance procedures, traffic routing, and facilities for the Class I landfill;
- Section 3 discusses landfill operations including basic landfilling procedures, waste handling, waste relocation, equipment, on-site roads, and general maintenance procedures for drainage swales;
- Section 4 discusses environmental controls including leachate containment and control, surface-water control, facility inspection, maintenance, monitoring, landfill active area controls, and record keeping;
- Section 5 describes the contingency plan for emergencies at the site;
- Section 6 describes the safety plan for the site;
- Section 7 discusses final closure of the JED facility;
- Section 8 describes operation of the borrow area.

2 LANDFILL PERSONNEL AND FACILITIES

2.1 Personnel Requirements

2.1.1 Numbers and Types

The positions and number of personnel anticipated to be employed for each position are presented in Table 1. Omni will have at least one trained operator at the landfill during active operations and at least one trained spotter at each working face. Spotter(s) will be located on heavy equipment spreading wastes while at the working face. All heavy equipment operators performing spotting duties while operating heavy equipment will be trained as an operator or spotter. The staffing levels presented in Table 1 provide for absences due to vacation, illness, holidays, or other reasons. Peak solid waste receipt periods, or other emergency conditions may require additional personnel and/or staff working overtime. These staffing levels are based on the assumption that work activities will generally take place 10 hours per day, 5 days per week and a half day on Saturday and Sunday.

If the daily volume at the landfill increases enough to require additional equipment, the staff will be increased as required to supply the personnel to operate and maintain the additional equipment. The minimum crew required to operate the landfill for receipt of waste is also presented in Table 1. In addition to the permanent staff, casual labor may be hired for area clean-up, ground maintenance, and other intermittent activities as required.

2.1.2 Employee Training

Employees of the landfill will receive initial and continued training in accordance with requirements of Section 62-701.320(15) of the FAC, and other Omni on-the-job training in the safe and environmentally secure operation of the landfill. In accordance with Section 62-701.320(15)(b)1 of the FAC, the operators at the landfill will complete 24 hours of initial training and pass the examination as part of the initial training. Within three years of the initial training, and every three years thereafter, landfill operators will complete additional 16 hours of continued training. In accordance with Section 62-701.320(15)(c) of the FAC, the spotters at the landfill will complete 8 hours of initial training as described in this Operation Plan. Within three years of the initial training, and every three years thereafter, landfill spotters will complete additional 4 hours of continued training. All certified training (initial and continuing education) will be provided by a FDEP-approved, qualified, independent third party in accordance with Section 403.716, F.S.

Omni will maintain training records for current employees at the facility and will make all records available to FDEP upon request. The requirements of the training program will

also be documented in writing. Examples of subjects to be covered in the employee training program include the following:

- overview of this Operation Plan;
- review of permits and regulations for operators and other key personnel;
- general landfill safety procedures pertaining to work around solid waste, landfill gases, and leachate;
- instruction in the operation and maintenance of equipment, machinery, and systems which the employee must operate, service, or monitor during his/her daily job duties;
- instruction in emergency response procedures for landfill fires or explosions, leachate pumping system failure or leaks, or other emergency situations;
- instruction in emergency shutdown procedures; and
- appropriate procedures for spotters and equipment operators, scale masters and other key personnel including recognition of hazardous wastes and reporting procedures for discovery of unauthorized wastes.

A list of trained spotters and operators at the JED facility and a list and schedule of the classes offered to the public, which may be attended by the JED facility's operators and spotters, is presented in Appendix A.

2.2 Landfill Entrance Procedures

2.2.1 Hours and Days of Operation

The landfill may be open to accept and dispose of solid waste from dawn to dusk, or 10 hours per day, whichever is greater. Typical landfill hours for acceptance of waste are:

Monday through Friday: 5:00 am to 5:00 pm

Saturday: 6:00 am to 12:00 pm

Sunday: 6:00 am to 10:00 am

Construction, daily cell preparation, hauling/excavating, road building, leachate management, or all non-disposal waste acceptance can be performed both within and outside of the posted operating hours. The actual hours of operation will be posted at the main entrance to the landfill. The landfill may be closed on Sundays and the following holidays:

Thanksgiving

Christmas

New Year's Day

2.2.2 Processing Customers

Upon entering the site, all landfill users entering the disposal area will be required to stop at the weigh station. The scale master will record the weight and type of waste for each waste load brought to the landfill. All waste loads will be visually inspected for hazardous or other unauthorized wastes in accordance with the waste inspection plan, which is presented in Appendix B. Unauthorized waste includes yard trash which cannot be disposed in a Class I facility. Customers will be directed to the City of St. Cloud, Osceola County, or other registered/permitted yard trash processing facility. A load-checking program will be used at the landfill to detect and discourage attempts to dispose of unauthorized wastes at the landfill. The load checking program consists of the following:

- The Landfill Site Manager is to examine at least three random loads each week. The selected waste hauling vehicles are to be directed to discharge their loads at a designated location within the landfill for a detailed inspection of the discharged material for any hazardous waste.
- If any regulated hazardous wastes are identified by the random load inspection or otherwise discovered to be improperly deposited at the landfill, the Landfill Site Manager will promptly notify FDEP, and if known the person responsible for shipping the wastes to the landfill, and the generator of the wastes. The area where the hazardous wastes are found will be immediately cordoned off from public access and properly removed from the designated location/work face. If the generator or hauler cannot be identified, the landfill operator will assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.
- A record of information and observations gathered during each random waste load inspection will be maintained. This documentation will include: the date and time of inspection; load weight; names of the hauling firm and driver of the vehicle; vehicle license plate number; source of waste as indicated by the driver; and observations made by the inspector during the detailed inspection. The responsible inspector will sign each waste inspection record. The random waste load inspection documentation will be maintained at the landfill for a period of at least three years.

Vehicles will be directed to the appropriate disposal area by signs or other means. Verbal instructions will be given by facility personnel when necessary. The appropriate area depends on whether the waste is typical municipal solid waste, white goods, used tires, or waste that should be placed in a particular location for special handling.

2.2.3 Public Use

Small, private vehicles will be directed to place their load in the appropriate disposal area by the scale master. Private vehicles will typically be directed to unload in two 20-yard roll-off containers located in the administrative area. However, private vehicles with a dump trailer will be directed to the landfill. These vehicles will be directed to unload in an area away from the commercial waste trucks and will be assisted to unload and return as quickly as practical.

2.2.4 Vehicle Inspection

A plan will be implemented by the Landfill Site Manager to prevent the on-site disposal of unauthorized wastes. A copy of the Waste Inspection Plan prepared for the Class I landfill is presented in Appendix B. This plan will be implemented by the Landfill Site Manager or designee to prevent the on-site disposal of unauthorized wastes.

The Landfill Site Manager or designee (Inspector) will be in charge of inspecting waste vehicles arriving at the site. The Inspectors will receive training in unauthorized waste identification. The training provides the opportunity to improve the inspector's knowledge and ability to effectively screen incoming waste.

2.3 Traffic Routing

2.3.1 Access Points/Signs

Access by all vehicles shall be via a single secured site entrance located on highway US 441. The entrance will allow for safe and orderly traffic flow into and out of the facility. The site entrance gate will be locked outside of operation hours.

Signs will be posted at the site entrance indicating the name of the facility, name of the operating authority, and hours and days of operation. In addition, a sign which clearly states "NO HAZARDOUS WASTES ACCEPTED" will be located at the entrance to the landfill. Traffic control and safety requirement signs will be located at and near the entrance to the facility as required.

2.3.2 On-Site Traffic Flow

Once vehicles delivering wastes have been weighed, they will follow directions or signs posted along the haul road(s) to the current active work areas of the landfill, or designated offloading area for waste solidification and waste tire storage and processing operations. Trucks will then proceed to deposit their loads at the appropriate working face. Signs or the scale master will direct small public vehicles to deposit their loads in the appropriate disposal area.

2.4 On-Site Structures

The site includes the following structures:

- office building/ticket office/weigh station
- scales
- maintenance shop
- storage area

2.5 Communication Facilities

The following communication facilities will be provided for routine communication and for use in emergencies at the site:

- cellular and/or conventional telephone in the office building; and
- on-site two-way radios.

3 LANDFILL OPERATIONS

3.1 Basic Landfilling Procedures

This section describes the procedures that constitute the daily landfill operations, the sequence of landfilling, working face practices, and control of the first and subsequent lifts. The landfill will be operated in accordance with these procedures and filled in the general sequence as indicated on the Permit Drawings.

3.1.1 Method of Operations

Landfilling areas will generally progress from north to south and from west to east. When a cell is opened, waste lifts will be placed to cover all areas to a depth of 10 to 15 feet to reduce leachate generation prior to placement to higher elevations in a cell.

Controlling truck routes and properly spotting loads will facilitate the spreading, compaction, and covering of refuse. During construction of the first lift, trucks will be positioned on a lift of previously compacted waste adjacent to the first lift being placed. In subsequent lifts, unloading at the toe of the working face and pushing uphill may be the preferred method. Lateral confinement or small work faces will be maintained to avoid wasting soil cover material. Temporary barricades or flags may be used as daily width markers for guiding equipment operators and for traffic control.

Vehicles transporting refuse and cover material to the working face will be routed over previously filled areas, whenever possible, for additional compaction of refuse and soil. Vehicles will not be routed over areas of the final cover system unless on a road specifically designed for hauling waste. Disposal vehicles will not be routed over a lined area before a lift of waste has been placed, in order to prevent damage to the liner.

Signs will also be posted in the operational areas if and when required. These signs will direct traffic, identify buildings, and specify types of material to be deposited in particular areas, including the waste solidification and waste tire storage areas. Safety signs will also be posted to identify certain safety requirements such as no smoking, speed limits, and stop signs.

The refuse may consist of household and commercial wastes, construction, demolition debris, and other similar materials, as allowed by regulations for Class I landfills. These readily compactable wastes lend themselves to the typical operations described in Sections 3.1.2 and 3.1.3.

3.1.2 Working Face Practices

3.1.2.1 Start-Up and First Lift

To assure protection of the landfill liner system, no disposal vehicles will be operated directly on the liner protective cover. Soil platforms or similar protective measures will be placed adjacent to the working face to keep vehicles off the liner protective cover. Landfill personnel will be positioned at the working face for the start-up of each new area to direct vehicles to their unloading points.

The first lift of waste on the liner protective cover will be placed with great care, using special methods to protect the liner from damage. The first lift of waste will be a minimum of 4 feet in compacted thickness and consist of select wastes containing no large rigid objects that may damage the liner or leachate collection system. Equipment will not be allowed on the liner protective cover and equipment will not spread waste in a manner that displaces the liner protective cover soil. Landfill personnel will closely monitor the placement, compaction, and covering of the first layer of waste. Landfill personnel will maintain grade control and inspect the filling techniques. Inadvertent damage or suspected damage to the liner system will be reported to the Landfill Site Manager and restored prior to filling in the damaged area.

To protect the liner system, the bulldozer will normally be used as the primary spreading and compacting machine for the first lift. The compactor will only be operated on top of the waste and not on the landfill base or on the waste sideslopes. The equipment operators will also make sure that no bulky waste or other material, which could damage the liner system is placed within the first lift.

3.1.2.2 Subsequent Lifts

After the first lift is properly in place, normal operating procedures will be used for the second lift and all subsequent lifts. Trucks and compactors are permitted to operate on these lifts. Bulky wastes delivered to the facility and any stockpiled bulky wastes received during construction of the first lift will be placed in subsequent lifts. The daily operating procedures including routing of traffic, placement, spreading and compaction of refuse, and application of initial and/or intermediate cover will be followed for the subsequent lifts of waste. Soil erosion control and site maintenance tasks will be implemented throughout the development of all lifts. Once the final landfill elevations have been reached over a suitably sized area, final cover may be applied to the landfill during the next construction season and vegetated during the customary planting season. Areas at final grade and interior slopes with intermediate cover may be covered with a temporary exposed geomembrane cover for erosion control purposes until such time final closure occurs or waste filling operations resume.

At the end of each working day, initial cover material (e.g., soil or alternate material) will be applied. An excavator, loader and truck will be used to load and haul soil from the stockpile area to the working face where it will be temporarily stockpiled or spread directly over the waste. Intermediate cover will be applied on areas that will be exposed for more than 180 days (i.e., outside sideslopes and the top of the final lift or portions of other lifts not soon to be covered by additional refuse.) An alternative to the soil, which is used as initial cover may consist of contaminated soils, auto shredder residuals, processed tires, mulch mixed with soils, tarps, or other approved material. As previously noted, a temporary exposed geomembrane cover may be installed over the intermediate cover for erosion control.

Material from on-site stockpile or borrow areas will be used to supply initial and intermediate cover requirements. To conserve soils and landfill space, the initial and intermediate cover will be scraped back immediately before placement of additional solid waste on top of the lift, and then reused as cover material if appropriate, or will be incorporated into the working face. Areas with initial, intermediate, and temporary exposed geomembrane cover will be graded to drain away from the active work area.

3.1.3 Filling Procedures

After the first lift, waste materials will be placed in approximately 2-ft thick horizontal layers when possible and compacted to approximately 1-ft thickness or as thin a layer as practical before the next lift is applied. Lift depths will typically not exceed 10-ft in thickness and the working face slope will not be greater than 3-ft horizontal to 1-ft foot vertical rise. However, a lift thickness of 10 to 15-ft may be necessary at times during days of higher waste acceptance rates and fill transition at outer slopes and change in direction. The need for an increased lift thickness is highly dependent on the fill configuration on that particular day and actual waste acceptance rate. An increased lift thickness is allowed by Rule 62-701.500(7)(c) of the FAC. When operating with an increased lift thickness, Omni will maintain adequate widths and spacing of operations as further described below to ensure safe operating practices.

The refuse cell is the basic building block of a landfill. It is composed of multiple compacted layers of waste and enclosed by cover material (i.e., initial, intermediate and/or final cover). Basic instructions for constructing the refuse cell are outlined below.

3.1.3.1 Width of Working Face

The working face is the portion of the uncompleted cell on which additional waste is spread and compacted. To maintain sanitary operation, the working face will be kept as narrow as possible. By keeping the working face narrow, equipment movement, cover material requirements, and the area of exposed waste is minimized. In order to facilitate

proper unloading and waste placement operations, two working faces may be required from time to time.

The optimal daily working face width will vary depending on the number of vehicles bringing waste to the site. The working face will be wide enough to prevent a large backlog of trucks. It is expected that a working face 150 to 200 ft (46 to 61 m) in width will be sufficient for operation of the JED facility.

3.1.3.2 Unloading

When unloading waste from top of the refuse cell, the waste will be discharged as close to the edge of the active working face as safe operations permit and pushed down slope. For safety reasons, a minimum 8 to 10 ft separation will be maintained between the refuse trucks and the landfill equipment.

When unloading waste from the bottom of the refuse cell, the waste will be discharged approximately 10 ft from the toe of the working face and pushed up the slope. Truck and landfill equipment separation, as discussed above, will be maintained. In order to prevent loads of waste from being discharged too far away from the toe, refuse trucks can be backed toward the toe, following a path created by the equipment pushing refuse into the working face.

3.1.3.3 Pushing, Spreading, and Compacting

Proper refuse cell construction involves pushing, spreading, and compacting the waste. These functions will be accomplished with a bulldozer and/or a compactor.

Pushing the waste is the action of moving the waste from the discharge location into the working face. This function will be accomplished with a bulldozer and/or compactor.

Spreading of the waste can be done by either a bulldozer or compactor. The purpose of the spreading action is to distribute the waste over the working face in a thin layer (approximately 2 ft thick). High in-place compacted unit weight of the waste is achieved by compacting in thin layers (i.e., 2 ft thick).

Good compaction is achieved by operating the landfill compactor up and down the working face after the refuse has been spread into a thin layer. Proper compaction of the waste will extend landfill life, while reducing litter and vector problems. To maximize compaction of the waste, the working face and inside temporary slopes will not exceed a maximum slope of 3H:1V. The Landfill Site Manager will periodically verify the compaction procedures and make corrections as necessary.

3.1.3.4 Daily Clean-Up

The area receiving wastes will be policed daily for loose waste and litter. Such waste, as well as litter along the litter fences, will be removed. The litter may be stored in trash bags until it can be deposited in the landfill.

3.1.4 Cover

3.1.4.1 Stockpiling

Cover soil stockpile locations, if needed, will change throughout the life of the landfill depending on site conditions and the location of the active working face. Landfill equipment will begin pushing or spreading the cover over the active cell area when and where it has reached its limit for the day.

A minimum of a three-week supply of acceptable initial cover will be maintained at the landfill and be available at all times. All stockpiles will be graded to minimize erosion potential. Silt fences or diversion berms will be utilized to control erosion.

3.1.4.2 Application and Phasing of Cover Materials

A 6 in. (150 mm) thick initial earth cover will be placed on top of all exposed waste on the working face at the end of each day's operation unless additional waste is to be deposited on the working face within 18 hours. The initial cover may consist of alternative materials including tarps, processed tire chips, auto shredded residuals, mulch mixed with soil, and contaminated soils. A 12-in. (300-mm) thick intermediate earth cover will be placed over the initial cover within 7 days of completion of an area if no additional solid waste will be deposited within 180 days. As noted in Section 3.1.2, a temporary exposed geomembrane cover may be placed over the intermediate cover materials to facilitate erosion control.

Final cover will be placed over the areas of the landfill that have reached final design elevations. Final cover will be placed within 180 days of reaching the final design elevations. Temporary exposed geomembrane covers will be removed, if present, prior to placement of final cover. The final cover system will be as described in Section 7 of this Operation Plan. Vegetation will be maintained over the final cover areas throughout the life of the landfill and the post closure care period. Maintenance of the final cover swales, and access roads will also be performed throughout the life of the landfill and the post closure care period.

3.2 Equipment

3.2.1 Primary Equipment

Based on the available range of handling capacities and the initial projected waste receipts, the allocation of heavy, primary equipment presented in Table 2 will be sufficient to handle the wastes received at the landfill. The primary functions of heavy landfill equipment are spreading and compacting solid waste, and excavating, hauling, and spreading cover material. Equipment similarities allow different equipment to perform functions as necessary. For example, when a compactor breaks down, a bulldozer can perform the compaction operation.

3.2.2 Back-Up Equipment

The equipment selection guide indicated in Table 2 will be adequate even if one of the pieces of equipment is temporarily out of service. If a piece of equipment is out of service for an extended period or if additional equipment is required on a temporary basis, this equipment is available for rental from several heavy equipment rental companies listed in Table 3.

3.2.3 Support Equipment

In addition to the heavy equipment used for operating and maintaining the landfill, other support equipment may be used to perform work not essential to the operations. This equipment will be present at the site most of the time, but some may be off-site, temporarily out of service, or rented for a specific occasion.

One 3,000 gallon or larger water truck will remain on site at all times and will be used for dust control and fire protection. The water truck will normally be positioned close to the working face for fire protection and will be equipped with spray bars so it can be used for dust control.

A utility tractor will be used to perform site maintenance activities. It will be fitted with attachments for mowing grassed areas. A backhoe or small excavator will assist the small dozer in maintaining drainage courses and ditches and for other site maintenance activities.

Pumps will be used for filling the portable water storage tank. These pumps will also be used to dewater any ponded water that forms in low areas around the site, including roads and lined landfill areas not in use.

3.2.4 Equipment Care

Routine preventive maintenance will be performed near the active landfilling area or at the maintenance facility to minimize equipment downtime and increase equipment service life.

Preventive maintenance varies with each piece of equipment. Therefore, the operation and maintenance (owner's) manual for each should be consulted. However, three applicable maintenance activities, which will be implemented at the site are:

- establish a routine equipment inspection program
- lubricate according to manufacturer's recommendations
- keep maintenance records

3.3 Roads

3.3.1 Road Construction

The main access road from the site entrance area to the scale house will be paved. Haul roads from the scale house to the active work area in the landfill will be improved, all weather, rock/recycled concrete surfaced or paved. A perimeter maintenance road will provide all weather access to leachate management systems, groundwater monitoring wells, landfill gas monitoring wells, and storm water management structures. The perimeter maintenance road will be surfaced with limerock or recycled crushed concrete. In the active work area, the roads will be surfaced with construction/demolition waste or other acceptable waste.

3.3.2 Maintenance of Roads

3.3.2.1 Filling of Potholes

Potholes will be filled with materials compatible with the road construction material. Potholes will be filled on a routine basis so that they are not allowed to remain open for extended periods. Before placing patches in holes, all loose material will be removed from the hole. New material will then be placed in the hole and compacted so that it will be approximately as dense as the materials originally used in the road.

3.3.2.2 Grading

As unpaved, all-weather roads become uneven due to traffic-caused rutting or displacement of stone, fresh rock or recycled crushed concrete will be applied to the surface and smoothed to an evenly sloped grade to promote drainage.

3.3.2.3 *Restoring Settlement*

When all-weather roads are built on fill areas, settlement of the filled area may cause cracks to appear in a road or cause the slope of a road to change. Cracks will be filled with material that is compatible with the roadbed. Areas of a sloped road, where the slope has changed drastically, will be built up with material compatible with the roadway. The buildup will be made by placing a 6 in. thick layer of the material, compacting it, then placing another 6 in. thick layer of material and compacting again. This process will be repeated until the desired elevation is achieved or the road section will be rebuilt.

3.3.2.4 *Cleaning of Public Access Roads*

Proper operation of the landfill will result in little or no debris being found on public roads. The public roads adjacent to the site entrance area will be inspected daily. If debris from the wheels of vehicles departing the landfill reaches the public access road at the entrance to the landfill, that road will be cleaned to a distance of 0.25 mi (0.4 km) or as required in both directions, if necessary, from the entry point onto the road.

3.3.2.5 *Removal of Materials from Landfill Roadways*

Any significant accumulation of dirt, brush, and other debris will be removed from the landfill roadways. Dirt left on asphalt roadbeds may cause dust problems during dry weather or mud problems during wet weather. A program of road cleaning will be implemented to prevent any buildup. Unpaved roads will be watered as needed to minimize dust.

3.3.2.6 *Maintenance of Drainage Swales*

Drainage swales along road beds will be kept free of obstructions. During the wet weather seasons, inspection of all drainage ditches and structures will be made at least once each week, or more frequently as required, and debris removed as required.

3.4 **Drainage Features**

- Routine Inspections: Inspection procedures are outlined in Section 4.2.3.
- Channels, Pipes, and Inlet Structures: Drainage structures will be cleaned of debris as soon as practical after problems are identified to prevent ponding. When unlined channels silt up, routine cleaning will be performed to restore the original capacity of the channels.
- Repair of Structures: Damaged structures will be permanently repaired during dry weather periods. During rainy periods, temporary repairs may be made to prevent further damage to the structure or erosion of soil.

- **Sediment Barriers:** Sediment barriers will be visually inspected periodically for damage, and to determine if sediment has accumulated behind them. Sediment will not be allowed to accumulate to a height exceeding half that of the barrier. Barriers will be replaced when visibly damaged. Barrier footings will also be inspected to ensure that drainage is not flowing beneath the barrier unless designed to do so.

3.5 Salvaging/Recycling

No scavenging will be permitted at the landfill. Waste tires will be accepted, stored and processed at the waste tires storage and processing area. The processed tires will be directly disposed in the landfill or used as initial/daily cover. Other recycling uses of processed tires may be proposed as markets are developed. Waste tire and processing operations are described in the Waste Tire Storage and Processing Plan provided in Appendix G. If the volume of other recyclable goods is sufficient, as determined by the Landfill Site Manager, those items may be separated from the waste which is to be disposed. Landfill gas is planned to be converted to electric energy as described in the Landfill Gas to Energy Operation Plan provided in Appendix F.

4 ENVIRONMENTAL CONTROLS

This section presents the basic components of the environmental controls at the JED Class I landfill. The major components of this section are the Facility Inspection Plan, Facility Maintenance Plan, and the Facility Monitoring Plan. In this section, a discussion of each of these components is presented, including a discussion of groundwater and surface-water protection controls, leachate collection system (LCS), and surface water controls, where appropriate. The discussion also includes general facility controls, including initial, intermediate and final cover, temporary exposed geomembrane cover, and access roads.

4.1 Environmental Control Systems

The purpose and function of each of the major environmental control systems are described below. Specific construction and design details are presented in the construction documents, the closure plan, post-closure plan, and the design report with attached plans.

4.1.1 Leachate Containment and Control

The Class I landfill is equipped with a double-composite liner system, which directs any liquid entering the landfill that may have contacted refuse to an LCS. The LCS drains liquid collected on the primary liner into a sump. Leachate in the sump is pumped into an on-site storage ponds and trucked to the City of St. Cloud wastewater treatment plant (WWTP) for disposal or recirculated back into the lined landfill area in accordance with the procedures described in the Operation and Maintenance Plan for Leachate Recirculation provided in Appendix D. The onsite water truck will be used to recirculate leachate under the Surface Leachate Application method described in Appendix D. After each use of the water truck for leachate recirculation, one load of clean fresh water will be sprayed within the lined disposal boundary prior to using the water truck for dust control purposes outside of the disposal boundary limits. Quantities of leachate collected by the LCS will be recorded in gallons per day and maintained as part of the landfill operating record.

A recording rain gauge will be installed, operated, and maintained to record precipitation at the landfill. Precipitation records will be maintained as part of the landfill operating record and used to compare with leachate generation rates.

4.1.2 Surface Water Controls

The surface-water management system for the JED facility consists of a system of drainage swales to move storm water to either permanent dry retention basins or interim dry retention basin, depending on the stage of landfill construction. All dry retention basins are surrounded by an earth berm designed to contain all runoff from a 100-year storm

event. Where runoff must pass through a roadway, appropriately sized culverts will be installed.

4.2 Facility Inspection Plan

4.2.1 Leachate Collection System (LCS)

The LCS will be water pressure cleaned or inspected using a video camera after construction but prior to placement of any waste. The pump(s) will be tested in the sump to assure that the system operates properly. Deficiencies will be repaired prior to initial deposition of waste.

The LCS includes manholes, pumps, a leachate wet well and a force main. The LCS pumps will be removed and inspected every 2 years. This 2-year inspection will consist of pressure testing of the pump. Pumps located in active areas, or areas without final cover, will be inspected on a monthly basis to confirm normal operation. Additional inspection, preventative maintenance, and checking of the electrical components will be performed in a manner and frequency in accordance with manufacturer's recommendations. The leachate transmission manholes will be inspected weekly for accumulation of leachate in the manhole and to verify integrity of the force main.

4.2.2 Leachate Storage Facility

The exposed exterior of the polyethylene leachate storage ponds will be inspected weekly for leaks, deterioration, and maintenance deficiencies. The leachate level and overfill control equipment will also be inspected weekly to ensure it is in good working order. The leachate levels in the ponds are inspected and recorded on a daily basis.

If inspection reveals a storage container or equipment deficiency, leak, or any other deficiency that could result in failure of the storage system to contain the leachate, remedial measures will be taken immediately to eliminate the leak or correct the deficiency. Inspection reports will be maintained and made available to FDEP upon request for the lifetime of the leachate storage facility.

4.2.3 Surface Water Control System

Surface-water culverts may contain landfill gas. Prior to accessing piping, protective measures will be taken to avoid explosion(s), fire(s), and asphyxiation(s).

Drainage swales, inlets, structures, and the surface-water management areas will be visually inspected monthly or following storm events. The frequency of dry inspections may be modified as appropriate based on progressive experience with the landfill drainage system, however, in no case will inspections be less frequent than quarterly. Regardless of

the inspection frequency, the system will be inspected following each twenty-five year storm event (i.e., 9 inches of rain in 24 hour period) or greater storm event.

Drainage swales, inlets, and structures will be cleared of obstructing debris as soon as practical after a problem is identified. If channels become filled with an accumulation of debris or soil, cleaning may be required to restore original flow capacity.

Erosion control measures will be employed to correct any erosion that exposes waste or causes malfunction of the storm water management system. The control measures to repair erosion will be implemented within three days of occurrence. If the erosion cannot be corrected within seven days of the occurrence, a proposed correction schedule will be provided to FDEP.

4.2.4 Landfill Cover System

Areas that have received intermediate or final cover will be visually inspected periodically for signs of erosion, cracks and depressions due to settlement, and leachate seeps. Areas where waste or geosynthetics have been exposed by erosion will be filled and regraded to minimize any subsequent erosion. Significant depressions (1 ft or more) will be filled with soil, compacted, and regraded to promote positive drainage. If leachate seeps appear in the uncapped area of the landfill, the seep area will be excavated and backfilled with highly permeable material to promote seepage through the landfill. The intermediate cover will be reworked to seal the area.

Areas that have received temporary exposed geomembrane cover will be visually inspected periodically for signs of damage (e.g., puncture, tearing, etc.) and depressions due to settlement. Geomembrane damage will be repaired if it is resulting in significant undercutting (1 ft or more) of the geomembrane cover. Significant depressions (1 ft or more) that result in water ponding on top of the temporary exposed geomembrane cover will be remediated as follows: i) the geomembrane will be removed from the depression area, ii) the depression will be backfilled with compacted soil and regraded to promote positive drainage, and iii) the temporary exposed geomembrane cover will be placed back over the regraded area.

4.2.5 Facility Inspection Schedule

Daily	Levels in leachate storage ponds
Weekly	Exterior of HDPE leachate storage containers and overfill control equipment
Monthly (Visual)	Leachate collection pumps Surface-water management system

	Cover in completed areas
	Leachate force main
Quarterly	Surface-water control system (or after a 25 year storm event)
Annually	Surface-water control system pipes and structures
	Topographic survey of landfill
Bi-Annually	LCS pumps and pipelines
(every 2 years)	Leachate collection and detection flow meters, valves, and risers

4.3 Facility Maintenance Plan

In conjunction with the inspection plan, a regular schedule of maintenance will be prepared and implemented. This section refers specifically to the maintenance of the environmental controls installed at the landfill. It does not include the regularly scheduled maintenance of landfill roads or equipment such as vehicles, scales, or buildings. Maintenance requirements in this section refer primarily to the mechanical equipment associated with environmental controls. In addition, each piece of equipment will be inspected and maintained in accordance with all manufacturers recommendations.

4.3.1 Leachate Collection System

The electrical controls, pumps, flow meters, valves, and couplings will be maintained on at least a bi-annual basis (i.e., every two years). In addition, parts that tend to wear out on a regular basis, including bearings on pumps, seals, and gaskets, will be replaced during regular maintenance. After replacing maintained parts, the equipment will be tested to assure proper performance.

4.3.2 Surface-Water Control System

The surface-water control system does not include mechanical systems that require regular maintenance, however, the system is to be inspected on a monthly basis or following storm events. The swales, drainage structures, inlets, and pipelines will be repaired and maintained as soon as practical following identification of any damage or deficiencies. This includes repair of lined and unlined ditches in the active landfilling areas, on intermediate and final cover and diversion ditches around the landfill.

4.3.3 Final Cover Maintenance

Maintenance of the final cover includes all the components of the cap, i.e., the geomembrane, drainage geocomposite, protective soil layer and vegetation. The periodic inspections will help in assessing the final cover condition to verify the integrity of the cap

(e.g., check for cracking of protective cover layer due to differential settlement or erosion and exposure of cover geomembrane/geocomposite), and the condition of the vegetation.

Areas of ponding or substantial differential settlement (1ft or more) will be checked to determine the cause. If a significant problem with the cover, vegetation, perimeter berms, erosion, or drainage structures is identified, work orders will be issued to correct the problems. Repair work shall be initiated as quickly as possible.

The timing of the repairs will be dependent on the nature of the repair. Minor filling to eliminate ponding, and the reseeding and fertilizing disturbed or problem areas will be accomplished with little delay. Major repairs, such as extreme erosion, significant local instability of slopes, or substantial settlement, might require geotechnical evaluation and design prior to implementing final repairs. In some cases, the need for analysis and design of the severely damaged areas will delay repair activities.

If repairs are necessary to the cover system swales, inlets, or downdrains to correct the runoff containment system deficiencies, the repairs will be undertaken prior to start of the wet weather season.

Repair of damages to the cover system resulting from erosion and differential settlement may include locally removing geosynthetics and backfilling depressions beneath the geomembrane, repairing geosynthetics, backfilling soil layers, and revegetating disturbed areas. Additional drainage facilities may be provided to prevent future erosion.

4.4 Water Quality Monitoring Plan

The groundwater and surface water quality monitoring plan for the JED facility is presented in Appendix E of the 2011 Solid Waste Renewal Permit Application. The leachate monitoring plan for the JED facility is presented in Appendix N of the 2006 Solid Waste Renewal Permit Application.

4.5 Landfill Gas Monitoring Plan

The landfill gas monitoring plan proposed for the JED facility will allow early detection of the lateral migration of landfill gas and verification of the landfill gas management system performance in accordance with the requirements of Section 62-701.530(1) FAC. The following types of landfill gas monitoring will be performed at the site: (i) monitoring for landfill gas in on-site buildings; (ii) monitoring for landfill gas migration along the perimeter berm; and (iii) monitoring at the property boundary for objectionable odors. The following subsections provide a description of the gas monitoring that will be performed at the facility.

4.5.1 Monitoring of On-Site Buildings

The on-site buildings will be located in the entrance area of the landfill. All buildings located within 500 feet of the waste limits on the property will be routinely monitored for methane. Continuous monitoring devices used within on-site buildings will be located in work areas, near any penetrations or cracks in building foundation, or at points where methane might enter the building.

If methane is detected at a concentration greater than 25 percent of the lower explosive limit (LEL) in any on-site building, Omni will perform the activities described in Section 4.5.4.

4.5.2 Monitoring for Landfill Gas Along Property Boundary

Gas monitoring probes along the property boundary (or the storm water berm where property boundary is far away from the waste limits) will be used to detect lateral migration of landfill gases. The gas monitoring probes located around the perimeter of the site will be monitored quarterly for methane. Should the results of the quarterly monitoring indicate lateral migration of landfill gases, Omni will install additional gas monitoring probes, as needed, in the area(s) of concern and/or perform additional monitoring. If methane is detected at a concentration greater than the LEL in the gas monitoring probes at the property boundary, Omni will perform the activities described in Section 4.5.4 below.

4.5.3 Monitoring for Objectionable Odors at the Property Boundary

Omni's on-site personnel will operate the facility to control objectionable odors and will perform monitoring for objectionable odors at the property boundary on a regular basis. It should be noted that no off-site occupied structures currently exist near the property boundary. Upon notification from the FDEP that objectionable odors have been confirmed beyond the property boundary, Omni will:

- Immediately take steps to reduce the objectionable odors. Such steps may include applying or increasing initial cover, reducing the size of the working face, and ceasing operations in the areas where odors have been detected;
- Submit to the Department for approval an odor remediation plan for the gas or odor releases. The plan shall describe the nature and extent of the problem and the proposed long-term remedy. The remedy shall be initiated within 30 days of approval;
- Implement a routine odor monitoring program to determine the timing and extent of any off-site odors, and to evaluate the effectiveness of the odor remediation plan.

4.5.4 Detecting Exceedances of the Regulations

Should the results of the gas monitoring indicate that the requirements of Section 62-70.530(1) have been exceeded at the facility, Omni will:

- immediately take all necessary steps to ensure protection of human health and notify the FDEP;
- within 7 days of an observed exceedance, Omni will submit to the FDEP for approval, a plan to remediate the landfill gas migration; and
- within 60 days of an observed exceedance, Omni will complete the remediation, unless otherwise directed by FDEP.

4.6 Landfill Active Area Controls

4.6.1 Litter Control

Maintaining proper litter control is essential to the operation of a landfill. When working in areas below natural grade, litter is less likely to escape than when working above natural grade. Litter control procedures for the landfill are discussed below.

4.6.1.1 Prevention of Litter on the Working Face

Litter will be minimized as follows:

- Following proper techniques at the working face may prevent a considerable amount of potential litter by reducing the amount of refuse exposed to the wind. Where possible, the exposed face of the cell will be oriented into the wind. This will cause the wind to blow any loose litter back into the working face and helps keep waste away from the undercarriages of unloading vehicles, which may track the waste along the public roadway as they exit the facility. The compacted waste already on the face helps trap litter.
- When top discharging, refuse will be placed as usual and spread downward. When possible, the exposed face of the fill will be oriented away from the wind for the same reasons bottom discharging is oriented into the wind.
- Compacted waste will be covered as soon as practical to minimize blowing litter.

4.6.1.2 Control of Litter with Litter Fences

Litter that escapes from the working face of the fill area may be controlled by litter fences. Movable/permanent fences may be positioned near the working face as wind and fill

operations change. Permanent litter fences may also be placed around the perimeter of the fill areas for additional litter control.

4.6.2 Buffer Maintenance

Litter may occur even with proper litter controls. The following clean-up and maintenance procedures will be followed on a routine basis to maintain the buffer areas:

- Litter clean-up from along fences and buffer vegetation: Litter will be removed from and along litter fences and vegetation as necessary. Litter will not be allowed to accumulate in buffer vegetation.
- Clean-up along on-site roads and buffer areas: Litter occurring along on-site roads and in buffers will not be allowed to accumulate. This litter will be cleaned up as necessary.
- Clean-up at entrance area and entrance road: The site entrance and the road leading to the entrance (¼ mile each direction) will be inspected daily. These locations will be cleared of litter as necessary.
- Vegetation will be maintained and supplemented as necessary in order to provide an adequate visual screen.

4.6.3 Dust Control

Dust control will be practiced during operation of the landfill by the application of water sprays from a water tank truck. The frequency of application of water for dust control will depend on site conditions and specific operation being performed. When necessary, water will be sprinkled on all heavily used roads. The main access road will be regularly sprayed to control dust when required.

4.6.4 Vector Control

Vectors, animals, or insects will be minimized. Maintaining the working face as narrow as possible, providing initial cover on exposed areas, and eliminating water ponding are the primary safeguards against vector problems. Well-compacted wastes and cover material effectively prevent vectors emerging from or burrowing into wastes. Inspections of the waste tire storage area will be performed as necessary to monitor the area for the presence of rodents and mosquitoes.

If problems with rodents or insects occur, monitoring and surveys for vectors will be conducted to verify the effectiveness or identify and implement improved vector control practices, including the use of traps and insecticides.

4.6.5 Noise Control

All equipment powered by internal combustion engines will have mufflers installed and maintained in good repair. Screening berms will also be used, when possible, to deflect sound upward.

4.6.6 Recordkeeping

An operating record will be maintained at the site including all records, reports, analytical results, demonstrations and notifications; any construction, operation, and closure permits, including all modifications to those permits, issued by the FDEP, along with the engineering drawings and supporting information; as well as training verifications. This record will be kept with the operation plan at or near the landfill facility, or in an alternate location designated in the operating permit which is readily accessible to landfill operators. The operating record will be available for inspection at reasonable times by the FDEP and maintained for the design period of the landfill.

As part of the operating record, waste records will be maintained. These waste records will indicate the amount of each type of solid waste received each day, and the reporting and record keeping procedures outlined in the LFGTE Facility Operation Plan (Appendix F) and Waste Tire Storage and Processing Plan (Appendix G). Waste reports, summarizing the waste records will be compiled monthly and copies will be provided to FDEP annually. The waste records will be kept with the operation plan at the landfill and will be available for inspection at reasonable times by the FDEP. Weight receipt records will be kept for a minimum of five years.

The operating record will also include the information and observations resulting from each random inspection of a waste load conducted as part of the load checking program as described previously in Section 2.2.2.

The operating record will also include:

- the quantities of leachate collected by the primary leachate collection and removal system, and the secondary leachate detection and removal system, in gallons per day; and
- a record of the daily precipitation at the landfill based on the rain gauge installed, operated and maintained at the landfill.

This data will be used to calculate the monthly leachate generation rates expressed as a percentage of the monthly precipitation.

In addition, the operating record will also include the following:

- records of all information used to develop or support the permit applications and any supplemental information required;
- records of all monthly information, including calibration and maintenance records, and water quality records; and
- an annual estimate of the remaining life and capacity in cubic yards of the existing, constructed landfill and remaining life and capacity of other permitted areas not yet constructed. This estimate will be reported annually to FDEP.

The operating records will be maintained at the landfill throughout the design life of the landfill. Records that are more than five years old which are required to be retained may be archived, provided that the landfill operator can retrieve them for inspection within seven days.

5 EMERGENCY CONTINGENCY PLAN

5.1 Introduction

This section identifies a set of unplanned circumstances that may occur at the landfill. If handled correctly, the damage or impacts from these problems can be minimized. This section presents procedures to follow for dealing with problems as they occur. Operating personnel will become familiar with the procedures in order to prevent environmental contamination or damage to landfill facilities.

The entrance to the facility allows emergency vehicles immediate access to the landfill by police, fire, and ambulance.

Appendix C presents a list of individuals responsible for implementation of this Emergency Contingency Plan, and facility and emergency response agencies to contact. This list will be posted near all telephones on-site to provide "ready" access to emergency response agencies.

Within 24-hours, the Florida Department of Environmental Protection (FDEP), Central District, shall be notified of any fire or other emergency which poses an unanticipated threat to the public health or the environment. The notification can be made by telephone or e-mail at the contact information listed in Appendix C. Within two weeks of any emergency, the operator of the site shall submit to the Department a written report on the emergency. This report shall describe the origins of the emergency, the actions that were taken to deal with the emergency, the results of the actions that were taken, and an analysis of the success or failure of the actions.

This plan is organized by subsection and contains specific plans to address each type of occurrence listed below:

- fire
- accident or injury
- release of contamination to environment
- hazardous waste
- uncooperative customers
- inclement weather
- problems with the leachate collection and leachate removal systems

5.2 Fire Control Plan

The procedures below will be followed in the event of a fire at the facility. Additional fire prevention measures for the waste tire storage and processing operations are presented in Section 6 of the Waste Tire Storage and Processing Plan provided in Appendix G.

5.2.1 When Fire Occurs

The following procedures will be followed in the event of a fire at the facility:

- extinguish small fires with fire extinguisher or smother with soil - do not remain near large fires or explosive materials;
- determine location, extent, type, and, if possible, cause of fire or explosion;
- notify on-site personnel and implement safety and fire control procedures;
- if the fire is located at the waste tire storage and processing area, determine if there is a possibility of discharge of oily materials generated by burning tires. If so, implement measures to contain the oily materials within the storage area (i.e., blocking the storm water discharge pipe at the storage pad and installing absorbent sock type materials;
- notify Landfill Site Manager if the fire cannot be immediately controlled;
- notify fire department if necessary. Clearly state:
 - location of landfill,
 - location of fire or explosion in landfill,
 - extent of fire or explosion,
 - type of fire or explosion,
 - actions now being taken, and
 - injuries;
- notify rescue squad, if necessary;
- notify health care facility, if necessary;
- notify sheriff, if necessary; and
- notify cleanup company for oily material generated at waste tire storage area, if necessary.

5.2.2 "Hot Load" Procedures

In the unlikely event that a "hot load" is not identified before entrance into the facility, the following procedures are implemented:

- the truck carrying the "hot load" is to be directed to discharge the load in the landfill but away from the working face and any exposed liner;
- the load is to be placed on top of intermediate cover which will provide sufficient protection between the "hot load" and the underlying waste;
- soil will be spread over the load to smother the "hot load"; and
- the "hot load" will be monitored until there is no evidence of smoldering or high temperatures.

At the end of the day or when appropriate, the load will be worked into the active working face. Areas where "hot loads" are extinguished varies depending on the location of the working face, but will always be away from the working face and any exposed liner.

5.2.3 Fire Extinguishers and First Aid Kits

Fire extinguishers and first aid kits will be installed in the following locations:

- office building/ticket house/weigh station/maintenance shop
- selected on-site vehicles and equipment
- waste tires storage and processing location

5.3 Accident or Injury

5.3.1 When an Injury Occurs

When an injury occurs, the following procedures will be implemented:

- shut down equipment in the immediate vicinity as is appropriate;
- determine extent of injuries (location, seriousness);
- apply pressure (compress) on wound to stop severe bleeding;
- if victim is not breathing and has a pulse, administer rescue breathing, if trained;
- if victim has no signs of circulation, administer CPR, if trained;
- DO NOT MOVE VICTIM(S), unless:
 - victim is still in danger, or
 - victim can move self without great pain;
- have someone phone rescue squad (911) unless injuries are clearly minor, and provide the following:
 - clearly state location, and

- describe injuries;
- stay with and keep victim(s) warm;
- notify Landfill Site Manager;
- transport victim(s) to a nearby medical center if:
 - injury is not serious, but requires medical attention (e.g., broken fingers, minor burns), and
 - victim(s) can move self without great pain;
- notify sheriff, if necessary; and
- apply first aid, as described below:
 - Landfill Employees - Minor accidents, such as bee stings, minor cuts, and small burns may be treated on site by an employee trained to administer first aid, and
 - Customers - First aid treatment will not be given to customers who have minor accidents at the site. However, personal information about the victim and a description of the accident will be obtained. The customer will be instructed to go to his/her doctor for examination and treatment, if required.

5.3.2 Procedures After an Accident

The following procedures will be implemented in the event of an accident:

- Accident Investigation - The Landfill Site Manager will make a complete investigation of the accident and events leading up to the time of the accident. The investigation will be started as soon as possible after the accident. All witnesses to the accident and persons involved in the accident will be interviewed.
- Determination of Cause - After the facts about the accident have been gathered, the Landfill Site Manager will make a determination as to the cause(s) of the accident.
- Filing of Reports - The Landfill Site Manager will complete and file the appropriate accident report forms.
- Corrective Steps - After a thorough investigation and determination of the cause(s) of an accident, the Landfill Site Manager will take corrective steps so that the same type of accident will not re-occur. These corrective steps may take the form of repair of faulty equipment, installation of safety equipment, or instruction of personnel in safe operating procedures.
- Discussion with Employees - If it is determined that the cause(s) of the accident were related to employee work habits and that remedial safety instructions would be helpful, a meeting with site employees will be held. The accident and the corrective

measures that will be taken will be discussed to prevent another accident. All employees will be instructed in proper safety procedures which should be followed.

- Follow-up - The Landfill Site Manager will follow-up the corrective measures to make certain that proper safety precautions are being taken. All unsafe practices will be called to the attention of the employees.

5.4 Release of Contamination to Environment (Remedial Response)

5.4.1 Response

If contamination is released to the environment, the following procedures will be implemented:

- determine location, extent, type, and, if possible, cause of release (e.g., leachate, contaminated surface water, fuel spill, etc.);
- notify Landfill Site Manager and implement safety and emergency response procedures;
- notify fire department. State clearly:
 - location of landfill,
 - location of contaminant release,
 - extent of release,
 - type of release, and
 - actions now being taken; and
- notify proper authorities including the Florida "Hot Line".

A list of individuals and emergency response agencies to contact in the event of a release of contamination to the environment is provided in Appendix C.

5.4.2 Follow-Up

Unless the occurrence of a contaminant release is clearly due to very unusual circumstances, the Landfill Site Manager will take corrective action to prevent recurrence of the release. The corrective action will be approved by the FDEP.

A report will be filed at the landfill by the Landfill Site Manager in order to have further reference for inquiries by authorities or Omni personnel. The report will state:

- time/date of incident or its discovery
- type of release and effects
- source

- response and effectiveness
- agencies contacted
- corrective actions planned and scheduled

5.5 Hazardous or Other Unauthorized Materials

In the event that a substance known to be or suspected of being hazardous or other unauthorized material is dumped from any vehicle at the waste disposal facility, the actions described below will be taken immediately.

5.5.1 The Observer

5.5.1.1 Known or Suspected Hazardous Material

The Observer will take the following actions:

- Immediately report the incident to the Landfill Site Manager or their designee.
- Avoid exposure to the substance in question. Stay upwind.
- Observe where the material was dumped, by whom (which vehicle), how much was dumped, whether the container appears sound or is leaking, and what the substance looked and smelled like. Such observations will only be made with extreme caution and with the utmost regard for safety. **DO NOT SNIFF OR TOUCH THE SUBSTANCE.**
- Ask the individual who dumped the suspect load where the material was obtained.
- Isolate the approximate area of the suspected load before it is covered or mixed with wastes from other vehicles.
- Ask the driver of the vehicle to remain at the dumping point to ensure adequate vehicle identification. If the driver attempts to leave the discharge point, the observer should inform the Scale master and/or the Landfill Site Manager.

5.5.1.2 Other Unauthorized Material

When other unauthorized waste is discovered by a heavy equipment operator while working at the active face area, the heavy equipment operator will either immediately stop operation of the heavy equipment and remove the unauthorized waste to an isolated area away from the active disposal operations or will radio for other site personnel to assist in removing the unauthorized waste to the isolated location. Operations will resume upon removal of the unauthorized waste. All unauthorized waste staged in the isolated location will be removed at the end of the day and temporarily stored in a designated onsite location

for proper management/disposal. Unauthorized putrescible waste will be removed from the site within 48 hours and non-putrescible waste within 30 days.

5.5.2 Landfill Site Manager

The Landfill Site Manager will take the following actions if a known or hazardous material is discovered:

- Notify the FDEP.
- Record all pertinent facts regarding vehicle, including but not limited to: name of carting company; license plate number; where the load was obtained, if known; any visible evidence identifying the waste substance; and quantity and state of the substance (e.g., solid or liquid or if contained or loose).
- Maintain careful records of other costs incurred as a result of the dumping incident including, but not limited to, security costs in isolating the area, costs of removal (by contract or otherwise) of the suspect material, other costs of intermediate or ultimate treatment and/or disposal, and any other pertinent costs.
- Coordinate the removal of the unacceptable waste with the proper authorities.

5.5.3 Non-Discharged Load

If, before a waste load can be discharged (e.g., during inspection), it is discovered to contain, or is suspected of containing hazardous or other unauthorized materials, the same reporting procedures by the Observer and Landfill Site Manager described for the discharged loads still apply, except concerning the discharging itself. In addition:

- inform the driver that his load is unacceptable and why;
- do not permit the load to be discharged; and
- suggest to the driver that he phone the FDEP to determine what he should do with the load.

5.6 Uncooperative Customers

The following actions will be implemented if a customer will not obey site rules or cooperate with site personnel.

- if the customer is creating a substantial problem involving their or other's safety, or significantly interfering with disposal operations, the Landfill Site Manager will decide what action should be taken;
- if the customer is creating a minor nuisance and does not respond to polite suggestions, the employee will record the vehicle description and license number,

and report the incident to the Landfill Site Manager or home office management; and

- in a case where a customer causes or threatens to cause harm to landfill property or personnel, or otherwise interferes with safe operation of the landfill, the Landfill Site Manager will contact the Sheriff.

5.7 Inclement Weather

5.7.1 Operation in Wet Weather

<u>Problem</u>	<u>Solution</u>
Saturated Unloading Area	<ol style="list-style-type: none"> 1) Stockpile well-drained soil and apply as necessary. 2) Keep compactors off area; use dozers on unloading area. Unload and push refuse perpendicular to area. 3) Grade unloading area slightly to permit runoff.
Mud Carried Onto Access/Public Roads	<ol style="list-style-type: none"> 1) Carefully scrape mud from pavement. 2) Provide clean rock dressing to internal access roads. If internal access roads are properly maintained, then dirt on the tires of disposal vehicles will be thrown off prior to reaching public access roads.
Cover is Wet/Unworkable	<ol style="list-style-type: none"> 1) Maintain compacted, sloped stockpiles. 2) Use alternate cover approved by permit.

5.7.2 Preparation for Inclement Weather

The following preparations will be made for inclement weather:

- Wet weather areas will be prepared during periods of dry soil conditions. The wet weather area will be constructed close to an all weather road. Work on the wet weather area will be performed at various times when personnel and equipment are not required for other higher priority assignments.
- Access roads around the site will be maintained as necessary. These roads will be maintained in a serviceable condition with the use of the available equipment on site, such as grader, water truck, dozer and loader. Major repairs will be scheduled, if required.
- Drainage structures, ditches, and sediment control will be checked to ensure they are in good condition and free of significant debris prior to anticipated heavy rains.

- Temporary (Operations Area) Drainage Control - cover material, rock/sand, aggregate, and corrugated metal pipe, will be stockpiled for use in an emergency situation.
- When periods of high wind are predicted, litter fencing will be moved to close proximity of the working face and in the expected downwind direction. Cover may be required frequently during the day.

5.7.3 Preparation for Severe Weather or Hurricanes

In addition to the activities listed in Section 5.7.2 above, the following preparations will be made for severe weather or hurricanes. The following activities will be performed before and after the severe weather condition.

72 hours prior to event

- Pick up any loose debris from the site
- Call supplier to top off all on-site fuel tanks
- Assess inventory
- Test generators
- Make final supply run for non-perishable food items and drinking water

48 hours prior to event

- Continue with housekeeping efforts
- Perform administrative building flood prevention (to protect documents, equipments, furniture, etc.)
- Continue to evaluate situation pertaining to alternate sites
- Inform customers of expected service
- Supply written instructions to all employees (by Omni human resource department)
- Allow employees time to secure their respective belongings

24 hours prior to event

- Continue with housekeeping efforts
- Fit plywood shutters where necessary
- Distribute phone numbers to all employees

- Inform customers & corporations of possible cessation of operations

12 hours prior to event

- Secure the facility
- Fuel all vehicles and heavy equipment
- Park all track machines and rubber tire equipment close together (at ground level, i.e., off the top of the landfill)

Post - Event

- Key personnel (facility manager, operations manager, and certified operators) to assess site
- Contact all employees
- Initiate clean up/recovery of the facility
- Use of non-essential office staff for miscellaneous duties
- Resume limited or complete operations

5.8 Problems Affecting the Leachate Collection and Removal Systems

5.8.1 Interruption of Power Service to the Landfill

The ability to switch over to the secondary power supply allows the leachate collection and removal systems to continue operating with virtually no interruption. In the event that the main power service to the landfill is interrupted for more than 24 hours, the site will be switched over to the secondary power supply system consisting of diesel generators.

5.8.2 Interruption of Flow to Leachate Storage Facility

In the event that leachate flow to the leachate storage facility is temporarily interrupted, the leachate will be stored in the active cell(s). If the system cannot be restored within a reasonably acceptable period, leachate will be pumped directly from the sump to tanker trucks for off-site treatment.

5.8.3 Primary Leachate Sump Alarm Level Switch

An alarm level switch will be installed in one of the primary leachate sumps to notify the operator in the event that leachate levels in the sumps reach this level. The intent of the alarm is to notify the operator of a potential problem with the leachate pumps or piping. The alarm may indicate that either one or possibly both of the primary leachate pumps may have stopped working, the pumping capacity of both pumps has been exceeded, the storage

containers are full, or there is possible blockage in the leachate transmission line. The operator shall observe the leachate pumps, pump control panels and flow meter to determine if either or both of the pumps are working. If at least one of the pumps is operational and there is no blockage in the leachate transmission line the operator will open the gate valve located in the secondary leachate manhole. By opening this valve leachate from the adjacent primary sump may flow into the secondary leachate sump for pumping. The operator shall record the flow meter reading on the secondary leachate sump pump prior to opening the gate valve. The operator shall also record the date and time of the occurrence and reason why the valve was opened (i.e., primary pumps failed, excessive leachate flow, etc.). The operator shall monitor the pumping of leachate to determine if the high leachate levels were associated with the pumps. The operator shall also examine the leachate transmission line manholes, piping and storage tanks assess any other potential problem. The leachate pumping system will require troubleshooting to determine the cause of the leachate build-up in the primary sumps and malfunctioning/inoperable pumps shall be replaced or repaired as soon as practical.

5.8.4 Managing Hazardous Leachate

In the event the leachate quality monitoring indicates the leachate is a hazardous material, the leachate will be managed in accordance with Chapter 62-730 of the FAC.

6 SAFETY PLAN

6.1 Emergency Procedures

- Posting of Procedures - All emergency procedures (Emergency Contingency Plan - Section 6 of this Operation Plan) will be updated as appropriate and after each emergency, if required. All emergency procedures will be posted in the Landfill Site Manager's office, in conspicuous places at the site, and at the gate house.
- The name, location, and telephone number of the nearest doctors, medical treatment facilities, and ambulance services (contained in Appendix C of this plan) will be posted in the Landfill Site Manager's office and all occupied buildings (i.e., maintenance building, gate house and office).
- Instructions on Procedures - All new personnel will be instructed on the emergency procedures used at the landfill. All employees will be informed of any changes in emergency procedures.
- Responsibility of Employee - It is the responsibility of every employee to know and remember their role in each emergency procedure at the site.

6.2 General Safety Practices

- Knowledge of Procedures - All employees at the landfill will know the proper procedures for reporting accidents, injuries, and fires.
- Posting of Information – Roadway limits within the landfill footprint will be clearly posted as necessary. Site speed limits will be clearly posted on the main access road. Direction of travel and location of curves will also be posted. The location of disposal areas will be clearly indicated.
- Site User Rules - Site user rules will be posted at the entrance to the landfill. Employees will watch for violations. Employees will explain rules to violators, stressing that the rules are for their protection. As a last resort, the Landfill Site Manager will notify the County Sheriff's Office for further action.
- Discharging Loads - For safe operations, the discharging area will be only slightly sloped (for drainage) at all times and equipment maintained in good repair.
- Safety Devices - Proper safety devices, such as roll-over protective cabs, will be installed on all equipment and kept in good repair.
- Fire Extinguishers - Fire extinguishers will be provided in buildings and on equipment. Each extinguisher will be appropriate for the types of fires likely and they should be checked or serviced as appropriate. Discharged (even partially) fire extinguishers will be removed and replaced with fully charged units.

- First Aid Kits – First aid kits will be maintained in the main office building and in select site vehicles. An inventory of the first aid supplies should be maintained in order to re-supply the first aid kits when items used.
- Safety Meetings - Safety meetings will be regularly scheduled. Situations that can cause accidents and ways to prevent them will be discussed. Also, the effectiveness of corrective actions following accidents at the site will be discussed.
- NO SMOKING will be allowed within the landfill area or near fuel storage facilities.

6.3 Safety Equipment

Certain safety equipment is specified for equipment operator protection. It is the responsibility of every employee to ensure that their safety equipment is in good condition. All employees are to use their safety equipment at appropriate times. The safety equipment recommended for equipment operators is listed in Table 4.

6.4 Site User Rules

The following set of rules will be observed at the landfill.

- No Smoking - Users will not smoke on the site.
- Children and Pets in Vehicles - Individuals (children and pets) not involved in unloading refuse will remain in the vehicle.
- Persons Unloading to Remain Near Vehicle - Persons unloading will remain within 10 ft (3 m) of their vehicle at all times.
- No one will be allowed to ride on the outside of a vehicle while on site.
- Discharge Waste Behind Vehicle - Whenever possible, waste will be discharged immediately behind the unloading vehicle.
- Unloading - No unloading by non-mechanized trucks or passenger cars is to be done using rapid acceleration or deceleration of the vehicle.
- Keep Tools in Vehicle - Tools, removable tailgates, sideboards, wheelbarrows, ladders, and tarps will be kept in, on, or under the vehicles being unloaded to prevent damage to other vehicles or site equipment.
- Speed Limit - The posted speed limit within the landfill site will be enforced. Operating personnel will direct users to further reduce their speed when justified by site conditions.
- No Scavenging - Scavenging is not permitted at the landfill site.

- No Shooting - Firearms are not permitted at the landfill site.
- No Explosives - Explosives are not permitted at the landfill site.

7 FINAL CLOSURE

7.1 Introduction

The JED facility will be closed as sections of the landfill reach final design elevations. The final cover system components are described in Section 7.2. Seeding and planting requirements are described in Section 7.3. Erosion minimization activities are described in Section 7.4. The final cover drainage system is described in Section 7.5.

7.2 Final Cover System Components

The cross section of the final cover system on the top slopes of the landfill is shown in the permit drawings and consists of, from top to bottom:

- a 0.5-ft (0.15-m) thick vegetative layer;
- a 1.5-ft (0.45-m) thick vegetative support layer;
- a 40-mil (1-mm) thick polyethylene (PE) geomembrane; and
- a 1-ft (0.3-m) thick intermediate cover layer.

The cross section of the final cover system on the side slopes of the landfill is shown in the permit drawings and consists of, from top to bottom:

- 0.5-ft (0.15-m) thick vegetative layer;
- a 1.5-ft (0.45-m) thick vegetative cover layer;
- a geocomposite drainage layer;
- a 40-mil (1-mm) thick PE geomembrane; and
- a 1-ft (0.3-m) thick intermediate cover layer.

The final cover system incorporates a geomembrane, which significantly reduces infiltration into the landfill cells. The grades of the final cover system are 3H:1V on the side slopes between benches and 5.0 percent on the top slopes.

7.3 Seeding and Planting

A vegetative cover will be established for the JED facility in order to minimize erosion on the final cover. Grass will be propagated by hydroseeding, sodding or by other equivalent method in order to promote vegetative growth on the slopes of the final cover as construction of the cover progresses.

An initial watering schedule will be developed at the time of closure, and will be dependent on whether the landfill is closed in the dry season or the rainy season. The grass will be watered and fertilized, as necessary, to ensure continued growth.

7.4 Erosion Minimization

Erosion of the final cover system will be minimized by final cover swales. The swales will intercept sheet flow from the final cover system. The final cover swales will direct the collected surface-water runoff to downchutes and the perimeter swale.

A vegetative cover will be placed on the final cover slopes of the landfill as described in Section 7.3. This vegetative cover will minimize erosion and reduce soil loss from the final cover system. The final cover system will be periodically inspected and erosion damage or vegetative stress observed during these inspections will be repaired before significant erosion has a chance to develop.

7.5 Drainage

Drainage swales are proposed on the final cover system to intercept the surface water runoff from higher elevations and direct the water via downchutes to the perimeter ditches around the landfill perimeter. The surface water flow direction on top of the final cover is illustrated in the permit drawings.

As required, the swales, downchutes, culverts, and perimeter ditches will be maintained on a regular basis. Significant sediment and debris, which has accumulated in the swales, culverts, and perimeter ditches will be removed to facilitate flow and prevent overflow. Significant sediment and debris is considered any amount that impedes flow in the swale or any buildup greater than 0.5 feet.

8 BORROW AREA OPERATIONS

8.1 Overview

Fill material needed for the JED facility construction and daily operations will be borrowed from excavations, or pits, located in the areas indicated on the Permit Drawings. Prior to any borrow activities in the location designated as Borrow Area A, the storm water management berm, in its interim configuration, will be constructed and vegetated. The outside toe of this berm will be constructed no closer than 25 feet to the nearest wetland boundary. In subsequent stages of the landfill development, the storm water management berm around Borrow Area A will be raised to its final height prior to the edge of the borrow excavation getting closer than 250 feet from the inside toe of the berm.

The development of Borrow Area C will be undertaken in future phases of the JED facility development. It is anticipated that this borrow area will be developed in a manner similar to Borrow Area A.

Two methods are proposed for excavating fill material from the borrow areas. These methods include: (i) mechanical excavation without dewatering (i.e. wet excavation) and/or (ii) dewatering the borrow area (i.e. dry excavation) and excavating fill using conventional earth moving equipment. Both methods are to be implemented in a manner which will minimize impacts to adjacent wetlands.

8.2 Wet Excavation

Wet excavation is expected to be the primary method of borrow area operation during construction at the JED facility. This method of borrow area operation will require removal of soil materials from the pit without first dewatering the pit. Initially, the area will be cleared and grubbed and the topmost organic soil layers will be stripped and used for construction of the perimeter berm or stockpiled for future use. Next, typical excavation equipment such as a dragline or backhoe excavator will be positioned to remove soils and temporarily stockpile the material on the surface adjacent to the excavation. The slope of the temporary stockpile area will be maintained to channel excess water back to the open excavation or to allow infiltration. A bucket-loader or other suitable equipment will maintain the temporary stockpile and will load trucks or pans used to haul the material to the area of current construction or to designated stockpile areas.

All borrow areas will be developed from the center of the designated area towards the outer perimeter. The excavation equipment will continuously move around the perimeter of the borrow area excavation. After digging to the equipment's optimum depth, the equipment will move in a clockwise or counterclockwise direction to continually expand the pit until it reaches the final planned dimensions.

8.3 Dry Excavation

Dry excavation will be the alternative method of borrow area operation at the JED facility. This method of borrow area operation requires dewatering of the borrow area prior to removal of soil materials. Initially, the borrow area will be cleared and grubbed and the topmost organic soil layers will be stripped and used for construction of the perimeter berm or stockpiled for future use. Next, a ditch recharge system will be constructed between the area to be dewatered and adjacent wetland areas, which may be affected by the dewatering activities. The purpose of the ditch recharge system is to maintain a ground water level between the dewatered pit and the adjacent wetland, which will prevent detrimental affects to the wetland area. It is anticipated that Omni may be required to obtain a water use permit from the South Florida Water Management District for the dewatering system if daily pumping quantities exceed 100,000 gallons. In conjunction with the water use permit application, a detailed layout of the recharge ditches, sequence of developing the dry pit, and location of pumps will be prepared.

The groundwater will be lowered in the borrow pit as the soil is excavated to provide trafficability in the excavation for equipment performing the excavation. It is anticipated that earth will be moved using self-loading pans, dump tucks loaded by backhoe, or other suitable heavy equipment, which will cycle through the borrow area to load and to the construction or stockpile site for unloading. As the excavation is progressively deepened, the ground water elevation in the excavation will be lowered ahead of the excavation bottom elevation. All water taken from the pit will be deposited in the recharge ditches, where it will maintain the ground water level in adjacent wetlands.

TABLE 1
PERSONNEL REQUIREMENTS
FOR RECEIPT OF UP TO 3,000 TONS OF WASTE PER DAY
JED FACILITY

Personnel Classification	Total Number of Personnel Employed	Minimum Number of Personnel Required for Receipt of Waste
Office Administrator	1	0
Scale master	1	1
Landfill Equipment Operator (s)/Spotter(s)*	8	2
Landfill Site Manager/Operator**	1	1

Notes:

* Equipment Operators will perform spotting duties while operating heavy equipment

** Random load waste inspector or designee

TABLE 2
HEAVY EQUIPMENT REQUIREMENTS⁽¹⁾
FOR RECEIPT OF UP TO 3,000 TONS OF WASTE PER DAY
JED FACILITY

Equipment On-site	Quantities
Chevy 1500 1/2 ton pick-up	1
Caterpillar 12G Motor Grader	1
CAT 613 Water Wagon	
6" water pumps	1
4" water pumps	1
Caterpillar D6 Dozer	1
Volvo Articulating Hauling Truck	2
Caterpillar 330 Excavator	1
Caterpillar 836 compactor	2

Note:

(1) Equipment manufacturers' names are provided to indicate the approximate size and/or capacity of the equipment. The specific manufacturer for this equipment is not required but similar size is.

TABLE 3
HEAVY EQUIPMENT RENTAL COMPANIES
JED FACILITY

Name of Rental Business	Phone Number
United Rental	(407) 332 – 1470
Lundquist Excavating	(407) 847 – 9419

TABLE 4
OPERATOR PROTECTIVE EQUIPMENT
JED FACILITY

Equipment: Each piece of heavy equipment should be provided with:

- Safety restraint belt
- Roll-over bars
- Backup warning system
- Fire extinguisher

Personal: Equipment operators should have the following personal protective clothing and accessories:

- Ear muffs or ear plugs
- Safety glasses or face shields
- Rubber or leather (steel toe, shank) boots
- Work gloves
- Hard hats

APPENDIX A

TRAINING PLAN

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Castro, Mr. Joao M

Title: Equipment Operator**Company:** Waste Services, Inc.**Address:** 1501 Omni Way
St. Cloud, FL 34773**Phone:** (407) 891-3720 ext. 226

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	11/17/2009	11/16/2012	8	16	False	11/17/2012	Transcript
Construction and Demolition Debris Landfill Operator	Current	11/17/2009	11/16/2012	8	16	False	11/17/2012	Transcript
Spotter / Waste Screener	Current	01/07/2009	01/06/2012	11	4	True	01/07/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910

UF | Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Collins, David G


Title: Equipment Operator
Company: Waste Services, Inc.
Address: 1501 Omni Way St. Cloud, FL 34773
Phone: 407 891 3720

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	08/15/2011	08/14/2014	0	16	False	08/15/2014	Transcript
Construction and Demolition Debris Landfill Operator	Current	08/15/2011	08/14/2014	0	16	False	08/15/2014	Transcript
Spotter / Waste Screener	Current	01/07/2009	01/06/2012	4	4	True	01/07/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910

 Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Ellerbee, Randall W., Jr.

Title:	
Company:	Waste Services, Inc.
Address:	1501 Omni Way St. Cloud, FL 34773
Phone:	407 891 3720

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	08/15/2011	08/14/2014	0	16	False	08/15/2014	Transcript
Construction and Demolition Debris Landfill Operator	Current	08/15/2011	08/14/2014	0	16	False	08/15/2014	Transcript
Spotter / Waste Screener	Current	01/06/2009	01/05/2012	5	4	True	01/06/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910


 Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Freeman, Mr. Brian

Title: Operator
Company: Waste Management Okeechobee Landfill
Address: 10800 NE 128th Ave Okeechobee, FL 34972
Phone: (863) 467-0499 ext. 225

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	06/14/2009	06/13/2012	0	16	False	06/14/2012	Transcript
Spotter / Waste Screener	Current	05/17/2009	05/16/2012	0	4	False	05/17/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910



Division of Continuing Education
UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

McKenna, Travis R., Sr.

Title:
Company: Waste Services, Inc
Address: 1501 Omni Way St. Cloud, FL 34773
Phone:

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Construction and Demolition Debris Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Spotter / Waste Screener	Current	01/07/2009	01/06/2012	4	4	True	01/07/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910

UF | Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Mullis, Ginnifer

Title:
Company: Waste Services, Inc
Address: 1501 Omni Way St. Cloud, FL 34773
Phone:

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Construction and Demolition Debris Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Spotter / Waste Screener	Current	08/27/2010	08/26/2013	4	4	True	08/27/2013	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910

UF | Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Orr, Mr. Matthew


Title:	
Company:	Waste Services, Inc
Address:	1501 Omni Way St. Cloud, FL 34773
Phone:	(407) 891-3720

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, II Landfill Operator	Current	09/03/2009	09/02/2012	0	16	False	09/03/2012	Transcript
Construction and Demolition Debris Landfill Operator	Current	09/03/2009	09/02/2012	0	16	False	09/03/2012	Transcript
Transfer Station Operator	Current	07/28/2009	07/27/2012	0	8	False	07/28/2012	Transcript
Material Recovery Facility Operator	Current	07/28/2009	07/27/2012	0	8	False	07/28/2012	Transcript
Spotter / Waste Screener	Current	01/06/2009	01/05/2012	7	4	True	01/06/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910


Division of Continuing Education
 UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Robbins, Brad

Title:
Company:
Address: 1501 Omni Way Saint Cloud, FL 34773
Phone:

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	08/29/2010	08/28/2013	0	16	False	08/29/2013	Transcript
Construction and Demolition Debris Landfill Operator	Current	08/29/2010	08/28/2013	0	16	False	08/29/2013	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910



Division of Continuing Education
UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Wilkerson, Bodie

Title:
Company:
Address: 1501 Omni Way Saint Cloud, FL 34773
Phone:

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, III Landfill Operator	Current	08/29/2010	08/28/2013	0	16	False	08/29/2013	Transcript
Construction and Demolition Debris Landfill Operator	Current	08/29/2010	08/28/2013	0	16	False	08/29/2013	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910



Division of Continuing Education
UNIVERSITY of FLORIDA

Florida's Solid Waste Operators & Spotters

University of Florida

[Home](#) | [Tracks](#) | [Courses](#) | [Providers](#) | [Participants](#) | [Reports](#) | [Login](#)

Participant Information

Winstead, David T.

Title:
Company: Waste Services, Inc
Address: 1501 Omni Way St. Cloud, FL 34773
Phone:

Tracks

Track	Status*	Current Period		Training Hours		Has met requirements to rollover to next 3-year period?		Transcript
		Start	Stop	Taken	FDEP Required	Yes/No	Rollover Date	
Class I, II Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Construction and Demolition Debris Landfill Operator	Current	10/07/2010	10/06/2013	0	16	False	10/07/2013	Transcript
Spotter / Waste Screener	Current	01/07/2009	01/06/2012	4	4	True	01/07/2012	Transcript

* If Expired, click on transcript link to see the training course history.

[UF Home](#) | [DCE Home](#) | [TREEO Home](#) | [Home](#)
 Copyright © 2011, Division of Continuing Education, University of Florida
 3900 SW 63rd Blvd. tel: (352) 392-9570 train@treeo.ufl.edu
 Gainesville, FL 32608 fax: (352) 392-6910

UF Division of Continuing Education
 UNIVERSITY of FLORIDA

APPENDIX B

WASTE INSPECTION PLAN

INTRODUCTION

This plan specifically addresses the inspection of routine, Class I waste loads for the exclusion of hazardous or otherwise unauthorized materials. The procedures in this text are intended to apply to routine Class I waste loads until a suspected hazardous or otherwise unauthorized waste is identified.

WASTE INSPECTION PROCEDURES

Upon arrival at the landfill property, each and every load of waste is stopped at the scale house to be logged in and weighed by the scale master. Waste arriving outside of the landfill's operating hours will be turned away by a locked gate. The site is accessible only by the main gate.

Once logged in and weighed by the scale master, the truck drivers are asked to confirm that they are hauling routine Class I waste. If the driver identifies the load as routine Class I waste, then one of the following procedures are implemented:

A) Open Topped Municipal Waste Haulers

If a truck is verbally identified to the landfill employees as hauling Class I waste, the truck contents are visually inspected to confirm that the load appears to contain exclusively Class I waste. This inspection is usually performed by looking down from on top into the open topped load, once the truck is un-tarped, by means of an elevated platform or "gantry" located adjacent to the scales. The presence of very noticeable or suspicious odors may trigger further analysis.

If the waste appears to be acceptable (**i.e., does not contain visible quantities of anything other than routine Class I waste**), then the truck is directed to the landfill active work face where it is visually inspected again by the spotter as it is unloaded and before it is spread and compacted. Any load discovered to contain potentially hazardous or otherwise unauthorized waste at this point is completely reloaded back into the waste truck and removed from the site. The rejected waste will not be authorized to re-enter the landfill site.

B) Class I Waste in Closed Containers

If a truck is verbally identified to the landfill employees as hauling Class I waste, but is not visually accessible for inspection at the gantry, the truck is forwarded to the active face of the landfill where its contents are inspected by the spotter as it is unloaded and before it is compacted or disposed. The inspection procedure at the active work face is identical to that described in the previous section. Any load discovered to contain potentially

hazardous or otherwise unauthorized waste at this point is completely reloaded back into the truck and removed from the site. The rejected waste will not be authorized to re-enter the landfill site.

RANDOM WASTE LOAD EXAMINATION

The Landfill Site Manager will examine at least three random loads of waste each week. The waste trucks selected for examination will be directed to the active face where the load can be visually examined upon unloading. Information and observations resulting from each random inspection shall be recorded in writing and retained at the landfill for at least three years. The recorded information, signed by the inspector, will include, at a minimum:

- the date and time of the inspection;
- the names of the hauling firm and the driver of the vehicle;
- the vehicle license plate number;
- the source of the waste as stated by the driver; and
- observations made by the inspector during the examination.

HANDLING HAZARDOUS WASTE

If any suspect wastes or wastes which could potentially be regulated hazardous wastes are identified by random load checking, or are otherwise discovered to be improperly deposited at the landfill, the Landfill Site Manager shall promptly notify the FDEP, the person responsible for shipping the wastes to the landfill, and the generator of the wastes, if known. The area where the wastes are deposited shall immediately be cordoned off from public access. If the generator or hauler cannot be identified, the Landfill Site Manager will assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility.

HAZARDOUS WASTE TRAINING

The Landfill Site Manager, and all other staff who may be required to perform a waste inspection, will receive training in hazardous waste identification, as well as an evaluation of their knowledge and ability to effectively screen incoming waste according to this "Waste Inspection Plan".

All new landfill employees will be teamed up with experienced personnel for at least one week upon commencement of work as an inspector in order to receive immediate on-the-job training.

NOTIFICATION OF UNACCEPTABLE WASTE LOADS

The rejection of waste, pursuant to this plan, will be recorded in writing and filed on site for a period of one year. The pertinent information concerning the rejection, such as truck license number, assumed contents, volume, and other relevant data, will be recorded on a LOAD REJECTION FORM. The Landfill Site Manager will contact the generator, hauler, or other party responsible for shipping the waste to the landfill to determine the identify of the waste sources. The appropriate local officials will be notified by phone when the waste load is asked to leave the site and all pertinent information made available to them upon their request.

APPENDIX C
EMERGENCY RESPONSE AGENCIES

EMERGENCY RESPONSE COORDINATOR(S)

(Landfill Site Manager will be responsible for implementation of the Emergency Contingency Plan at the facility. Below are names of the contacts.)

- 1) John Hartings (407) 891 – 3720 (Office)
Landfill Manager (407) 818-6358 (Mobile)
1501 Omni Way John.hartings@progressivewaste.com (E-mail)
St. Cloud, Florida 34773
- 2) Mike Kaiser (904) 673 – 0446 (Mobile)
Region Engineer michael.kaiser@progressivewaste.com (E-mail)
1099 Miller Drive kaiser@wsii.us
Altamonte Springs, Florida 32701
- 3) Bob Walls (407) 261-5031 (Office)
Post Collections Division Manager (321) 316-7920 (Mobile)
1099 Miller Drive bob.walls@progressivewaste.com (E-mail)
Altamonte Springs, Florida 32701

EMERGENCY RESPONSE TELEPHONE NUMBERS

Fire Department	911 (407) 343 – 7000 Non-Emergency
Sheriff's Office	911 (407) 348 – 2222 Non-Emergency
Rescue Squad	911 (407) 343 – 7000 Non-Emergency
Hospital (Florida Hospital)	(407) 846 – 4343
County Manager	(407) 343 – 2380
Florida "Hot Line"	(904) 488-1320
Florida Department of Environmental Protection Central District Central District Solid Waste Section Gloria Depradine	Business Hours (407) 897-4100 After Hours (407) 897-4304 e-mail: Gloria.depradine@floridadep.net

APPENDIX D

**OPERATION AND MAINTENANCE PLAN FOR
LEACHATE RECIRCULATION**

OPERATION AND
MAINTENANCE PLAN
FOR LEACHATE
RECIRCULATION
AT THE JED SOLID WASTE
MANAGEMENT FACILITY

Prepared for
Omni Waste of Osceola County, LLC

OPERATION AND MAINTENANCE PLAN
FOR LEACHATE RECIRCULATION AT THE JED
SOLID WASTE MANAGEMENT FACILITY

Prepared for
Omni Waste for Osceola County, LLC
June 25, 2008

BROWN AND CALDWELL

850 Trafalgar Court, Suite 300
Maitland, FL 32751

TABLE OF CONTENTS

1. OPERATION.....	1-1
1.1 LEACHATE RECIRCULATION METHODS.....	1-1
1.1.1 Surface Leachate Application	1-1
1.1.2 Leachate Recirculation in Trenches.....	1-2
1.1.3 Horizontal Leachate Injection Pipelines	1-3
1.2 ENVIRONMENTAL CONTROLS	1-3
1.3 REPORTING REQUIREMENTS.....	1-6
1.4 RESPONSIBILITIES AND TRAINING	1-6
2. MAINTENANCE	2-1
2.1 MAINTENANCE AND REPAIR OF PUMPS	2-1
2.2 MAINTENANCE AND REPAIR OF LEACHATE LINES.....	2-1
3. CONTINGENCY.....	3-1
3.1 SEVERE WEATHER CONDITIONS.....	3-1
3.2 FIRE OR EXPLOSION	3-1
3.3 EMERGENCY CONTACTS.....	3-1
4. LIMITATIONS	4-1
Report Limitations	4-1
ATTACHMENT A	A
Figure 1 Cells 1 through 4 leachate recirculation layout.....	A
ATTACHMENT B	B
Data Collection and Inspection Form	B
ATTACHMENT C	C
Moisture Balance Calculations	C

Hala A. Sfeir, PhD, P.E.

FL P.E. No. 54083

Date 06/24/2008

OPERATION AND MAINTENANCE PLAN FOR LEACHATE RECIRCULATION AT THE JED SOLID WASTE MANAGEMENT FACILITY

1. OPERATION

The objective of the leachate recirculation system is to increase the moisture content of the waste mass in as much of the landfill as possible. Areas currently being proposed for recirculation include active Cells 1 through 5 and future Cells 6 through 21. Leachate recirculation in these areas will accelerate waste decomposition, resulting in quicker settlement of the landfill and increased airspace. Additionally, gas production will be accelerated within the landfill, resulting in more gas that can be used beneficially.

Leachate recirculation must be performed in a safe and environmentally sound manner. The operation of the leachate recirculation system is the responsibility of operation staff at the JED Solid Waste Management Facility. The person responsible for coordinating operational activities is the Landfill Site Manager. Trained JED Solid Waste Management Facility personnel will be responsible for performing leachate recirculation operations under the Landfill Site Manager's direction. Leachate recirculation will be applied by surface application at the active working face with or without daily cover, by trenching at the surface of inactive cells where intermediate cover has been applied, and by subsurface injection in horizontal pipelines installed in the waste mass at various waste elevations.

1.1 LEACHATE RECIRCULATION METHODS

For the purposes of this operations plan, leachate recirculation refers to the addition of leachate into the landfill.

Three leachate recirculation methods may be used at the JED Solid Waste Management Facility, as described below:

1. Surface leachate application, by spraying, at the active working face with or without daily cover;
2. Leachate distribution in trenches; and
3. Horizontal leachate injection lines.

The data gathered during the startup of these systems will be used to establish operating criteria and guidelines to be applied during routine operations. Each method of leachate recirculation is described in more detail in the following sections.

1.1.1 Surface Leachate Application

The purpose of applying leachate at the working face is to raise the moisture content of the waste prior to compaction. This method contrasts with typical recirculation methods which add moisture to the waste after it has been compacted. By applying leachate at the working face, it is possible to increase compaction of the waste at the time of placement, resulting in better utilization of airspace within the landfill. Studies suggest that a 5 to 20 percent increase in density is achievable when leachate is applied at the working face of the landfill. Furthermore, moisture added at the working face will reduce the potential for blowing debris.

Surface application of leachate may also be applied on waste surfaces that have daily cover but area least 50 feet away from side slopes/and stormwater structures and drainage pathways.

Operational Procedures and Guidelines

The application of leachate to the working face will be performed in a responsible manner so as to minimize any adverse impact to human health, safety, and the environment. Application of leachate at the working face will be by tanker truck equipped with coarse spray nozzles, located approximately three to four feet from the surface of the waste, and directed downward to limit airborne liquids. Leachate will be applied in areas of the working face that do not conflict with active disposal operations. Ponding of leachate will be minimized by increasing the size of the application area relative to the rate of application. Leachate runoff will be controlled through the use of temporary operational containment berms if necessary, and close monitoring of application rates and volumes. Odors will be controlled by regular mixing of the leachate into the waste mass using landfill compaction equipment and through the application of daily cover soil.

Leachate Application Rate

The operating area will be closely observed by the Landfill Site Manager during the beginning of leachate application. The leachate application rate will initially be four gallons per ton of waste (see calculations in Attachment C). The amount of leachate applied can be increased or decreased as field conditions allow. Since the leachate will be applied to waste that is not fully compacted, it is expected that the liquid will flow directly into the waste mass and be absorbed. Leachate will also be sprayed onto areas that have received daily cover soil. Since these areas may be less permeable than areas with exposed waste an evaluation of rate of leachate application will be determined through field monitoring and testing. Leachate will be applied only to areas 50 feet or greater from side slopes and will be applied so as not to drain to exterior stormwater management systems.

1.1.2 Leachate Recirculation in Trenches

Initial trenches will be located at the vertical expansion of Cells 1 through 4 as illustrated in Figure 1 in Attachment A. Trenches are excavated to a depth of approximately one and a half foot or up to six inches above the waste with a width of approximately four feet and at least fifty feet from edge of slope. Daily cover may be placed over the trench in the event of the trench reaching the top of the waste.

The leachate distribution area for Cells 1 through 4 is divided into three zones with each zone containing six horizontal trenches. The horizontal trenches will be approximately 500 foot long and at approximately 50-foot intervals. Trenches can be backfilled with six to twelve inches of any onsite available permeable drainage media (e.g., gravel, shredded tires, or crushed glass) for further leachate recirculation applications.

Operational Procedures and Guidelines

Leachate recirculation in trenches for existing Cells 1 through 4 will be applied to all three zones outlined in Figure 1. Daily applications of leachate will be applied per zone for the duration of one to two weeks. Estimated quantity and rate of leachate to be recirculated in each trench will be determined once the capacity and permeability of the waste in the trench has been determined. Initial recirculation rate in trenches is discussed in the following section.

It should be noted that once an active gas collection system is installed leachate recirculation in trenches with permeable drainage media may not be a viable option due to air intrusion.

Leachate Application Rate

Based on the volume of waste in place in Cells 1 through 4 at 90 ft waste elevation and taking into consideration that leachate recirculation will not be applied 50 ft from top of slope the total leachate that will be recirculated to reach 23% moisture content by weight for each trench will be approximately 347,750 gallons/trench for a total of 6,259,500 gallons for all 18 trenches outlined in Figure 1.

The daily leachate application rate in each trench will be dependant on the available time prior to the vertical expansion of the waste fill.

1.1.3 Horizontal Leachate Injection Pipelines

The recirculation system may also include horizontal injection pipelines buried in the waste. Initially, recirculation tests utilizing horizontal pipelines will characterize the leachate recirculation capacity of the injection trenches. The location of the initial trenches and injection pipelines to be installed initially in Cells 1 through 4 are illustrated in Figure 1. The installation of the horizontal injection pipelines will be based on factors such as the depth to the existing pipelines, the total future height of the waste, and the area that is being filled.

It should be noted that the area in which recirculation can take place changes as the elevation of the operational area changes.

Operational Procedures and Guidelines

The landfill operator will construct the horizontal injection pipelines as waste is deposited. During injection pipeline installation, waste filling operations will be moved to a part of the landfill away from the construction activity. Horizontal injection pipelines are constructed by excavating trenches from one slope to the other at approximately 50-foot intervals into recently placed waste on a landfill. Trenches are excavated to a depth of approximately three feet and a width of four feet. A permeable drainage media (e.g., gravel, recycled concrete, shredded tires, or crushed glass) is placed in the bottom of the trench and in some cases on top of the pipe. Some injection trenches may be constructed without drainage media and/or without pipe. An example of a leachate injection pipeline configuration is illustrated in Figure 1. Trenches will be backfilled with waste once the pipe and bedding are installed. Efforts will be made during backfilling to cover the trench in the same manner as the waste surrounding the trench to avoid later channeling through the cover soil layer around the trench. Following installation of the pipelines, the actual location (elevation and horizontal location) will be documented using GPS equipment.

Leachate Application Rate

The daily leachate application rate in each injection line will be dependant on the amount of waste in place at the time of application.

1.2 ENVIRONMENTAL CONTROLS

Prevention of Leachate Run-off

It has been demonstrated at landfill sites where leachate is recirculated that controlling the site conditions, and the rate and location of leachate application, are essential for successful operation. This section outlines the surface application procedures to be followed for the leachate recirculation system. Additionally, the following controls will be implemented to protect human health, safety, and the environment:

- Leachate will not be applied to the working face if it is raining sufficiently to result in run-off from the landfill. Regardless of the run-off, the application of leachate will be postponed if rainfall exceeds a drizzle (in excess of 0.2 inches per day of rainfall).
- Leachate will not be applied at a rate that creates run off from the operating area that could potentially reach exterior stormwater management systems, regardless of weather.
- Leachate will not be applied within 50 feet of the exterior slopes of the landfill or operational slope. This will eliminate the possibility for run-off of leachate down slopes in the event of an equipment malfunction.

- Temporary operational stormwater control diversion berms and proper grading of areas to receive recirculation will be utilized to form containment within the application area.

Prevention of Leachate Contact with Operators

Leachate recirculation at the surface will be applied using a site water truck or tanker with side bar discharge or spray nozzle with directional and volume controls located inside the cab of the truck. The following guidelines will be used:

- No personnel will be in contact with the leachate.
- No personnel will be allowed outside of the operational vehicles in the vicinity of the application area at the time of the application of leachate.
- The discharge nozzles will be non-atomizing and can be adjusted so that a steady stream of leachate can be applied at a controlled rate.
- Leachate will not be applied to the working face in winds exceeding 20 miles per hour.
- Leachate will be applied at the working face, but in areas away from the active disposal area, when possible. This limitation will provide adequate protection for dump truck drivers and compactor operators, who are also required to stay in the vehicles.

Prevention of Leachate Ponding and Instability of the Waste Mass

Leachate recirculation will be limited by the JED Solid Waste Management Facility operational plan to an amount that will result in less than 100 percent saturation of the waste. Initially, the application rate will not exceed 4 gallons/ton of waste placed within the recirculated area, as computed on a weekly average. The quantity of leachate applied may be adjusted based on the measurements conducted during the recirculation program indicating that more or less leachate can be applied without exceeding the operating parameters. The leachate application rate will be adjusted as necessary to achieve an average waste moisture content of approximately 23 percent by weight or design waste density of 70 lb/yd³.

Leachate will be applied in an area of the working face large enough to prevent localized ponding of leachate. Initially, an application rate of 4 gallons/ton (a daily average of approximately 22,000 gallons/day) from the leachate tanker truck will be used. The size of the application area will be determined through observations of the performance of the recirculation system. In addition to applying leachate over a sufficiently large area, the sections with previously applied leachate will be covered with incoming, unsaturated waste incrementally to minimize ponding and control odors.

Moisture content will be evaluated monthly or other determined frequency basis using moisture mass balance. A copy of an example of the moisture mass balance is available as Attachment C.

Monitoring and Inspection Requirements

The Landfill operators are primarily responsible for monitoring the leachate recirculation system. Daily inspections shall be performed to ensure that the system is functioning properly and to identify any problems, such as surface seeps. An example of a typical inspection form is presented in Attachment B.

System Components

Throughout preliminary and routine operations, the leachate recirculation system components such as valves, flow meters, connections, and pumps shall be inspected weekly for leaks, damage and wear. The results of these inspections will be recorded on the inspection forms.

Leachate Monitoring

Overall procedures for leachate level monitoring, sampling, analysis, and reporting are included in the existing JED Solid Waste Management Facility Operation Plan. Monitoring of the leachate recirculation program will include recording the quantity of leachate applied to the different zones of the landfill (either at the surface or by subsurface injection pipeline) and the quantity of leachate pumped out of the leachate collection system each day. An example form for use in recording this data is included as Attachment B.

Surface Seeps

- During preliminary and routine operation, the landfill surface must be examined daily for leachate seeps caused by short circuiting leachate. The results of these inspections will be recorded on the daily inspection forms.
- During seep inspection, the operator is to examine the side slopes of the landfill at the elevation of the active recirculation lines and below.
- The operator will physically examine the surface of the landfill in the vicinity of the leachate injection pipelines and look for signs of seepage including excessive moisture on the surface, discoloration, and/or leachate odors.
- The operator will look for signs of leachate seepage on the perimeter berm or on the access road that may have been a result of a subsurface seep.
- Preliminary Operation – The operator must do a thorough walkthrough of the appropriate side slopes once per day.
- When surface seeps are encountered, the operator will attempt to identify the source of the seep. Leachate recirculation in the area of the seep will cease until the extent of the problem and possible corrective measures have been evaluated. Corrective measures include eliminating or reducing the leachate recirculation rates to certain areas of the landfill where seeps occur, or increasing the amount of cover material in areas of seeps.

Gas and Odors

One of the goals of leachate recirculation is to increase the rate of stabilization of the waste. With the increased rate of decomposition comes an associated increase in gas generation and possibly odors. During seep inspections, odor intensity around the landfill will also be documented on the inspection form. Additionally, a record of any odor complaints related to gas production will be maintained at the landfill administrative office.

When landfill gas odors are detected at an unreasonable level, or public complaints are made, the Landfill Site Manager shall immediately initiate an investigation to determine the source of the odor problem. Once the source of the odors is discovered, appropriate corrective actions shall be taken to reduce or eliminate it.

If odors become a chronic problem at the landfill, operation of the leachate recirculation will be re-evaluated. Additionally, the operation of the gas collection system will also be re-evaluated. Possible means of dealing with odors may include the following:

- Reducing the rate of leachate recirculation, particularly at the landfill working face;
- Installation of additional active gas extraction wells;
- Installation of an impermeable cover over landfill side slopes that have reached final permitted elevation and areas of the landfill where active gas extraction wells have not been installed.
- Use of the horizontal injection pipelines as active gas extraction collectors.

Prior to implementing any remedial system, Waste Services Inc. will discuss the system with the Florida Department of Environmental Protection (FDEP) and obtain the required approval prior to implementation.

Waste Stability

The surface of the landfill will be visually inspected on a daily basis for any indications of unstable slope conditions. The presence of any such indicators shall be recorded on the inspection forms. Slope inclinometers will be installed in any areas identified during the inspection above. Inclinometers will be monitored on a daily basis. If the inclinometer indicates an increase in slope for three consecutive days, leachate recirculation will be immediately halted, and the Engineer of Record for the facility will be brought in to assess the situation before resumption of recirculation activities.

1.3 REPORTING REQUIREMENTS

Operators' daily responsibilities include the following:

- Completing daily operation reports and inspection forms (Attachment B).
- Recording locations of leachate recirculation, leachate recirculation rates, leachate production rates, and pressure readings, if available.
- Inspection results for the leachate recirculation system, leachate collection wet well and pumps, and landfill cover for seepage or damage.
- Maintenance of the system as required.

Operators' weekly responsibilities include the following:

- Attending weekly operation meetings for leachate recirculation planning.
- Completing weekly operations summaries.

1.4 RESPONSIBILITIES AND TRAINING

The health and safety of workers associated with operation and maintenance of the leachate recirculation system is important. Training for operators of the recirculation system will be conducted by the Landfill Site Manager, or a person designated by the Landfill Site Manager. Operators will be given four hours of apprenticeship training before being allowed to operate any portion of the system. The apprenticeship training includes the following:

- Objectives of the leachate recirculation system.
- Operation of the leachate collection system
- Daily, weekly, monthly, and quarterly inspections including monitoring, data collection, and maintenance.
- Spray application of leachate at the working face.
- Trench excavation and leachate application.
- Installation, operation and maintenance of horizontal injection lines and pumping equipment.
- Contingency operations.
- Emergency contacts.
- Emergency shut-down procedures.

OPERATION AND MAINTENANCE PLAN FOR LEACHATE RECIRCULATION AT THE JED SOLID WASTE MANAGEMENT FACILITY

2. MAINTENANCE

To monitor the proper operation of the system components and the system in general, the operator shall perform periodic inspections of all equipment and connections. Maintenance of the leachate recirculation system components (i.e., pumps, piping system, pressure gauges, and valves) is performed during daily and other routine inspections as necessary to keep the system operating properly. Maintenance performed is recorded on the daily inspection form (Attachment B).

2.1 MAINTENANCE AND REPAIR OF PUMPS

The leachate recirculation pumps will be visually inspected by the JED Solid Waste Management Facility operations staff on a daily basis for proper operation. Preventive maintenance will be performed according to the recommendations in the pump manufacturer's operation and maintenance manual. Since two pumps may be installed, one pump can be taken out of service while maintenance is performed on the other pump, and the system can still be fully operational.

2.2 MAINTENANCE AND REPAIR OF LEACHATE LINES

Once installed and brought on-line, the leachate injection pipelines require little maintenance, but will be inspected periodically for damage. A leachate injection pipeline is deemed to be "functioning properly" if there are no sudden increases or decreases in back pressure readings. Monitoring and controlling the pressure in the leachate injection pipelines assures even leachate distribution throughout the horizontal injection pipeline without jeopardizing the slope stability of the landfill. A high backpressure reading could indicate that a valve was accidentally closed or malfunctioning, a horizontal leachate injection pipeline has become clogged, or that the waste around the horizontal injection line was at a saturated state and thus not capable of accepting more leachate. Should the pressure reading increase above daily average recorded pressure, the pipeline should be shut down for a period of one week. If the pressure remains high after one week, the line should be shut down until the cause of the high pressure is identified and corrected. If the problem is not identified, the pipeline will be shut down permanently. The valve controlling the flow to the inoperative pipeline should be shut, the flexible hose from the header to the injection line itself should be removed, and the horizontal injection pipeline should be capped.

If there is a substantial decrease in back pressure reading, it could indicate that a pipeline has been cracked or broken and that leachate is not being evenly distributed throughout the length of the pipeline. This could result in an increased application of leachate in the area immediately around the broken pipe, channeling of liquid through the waste mass and other potential adverse impacts. If there is suspicion that a pipeline may be broken, it should be taken out of service as described above.

OPERATION AND MAINTENANCE PLAN FOR LEACHATE RECIRCULATION AT THE JED SOLID WASTE MANAGEMENT FACILITY

3. CONTINGENCY

Contingency plans with regards to leachate recirculation include operational procedures to be followed during severe weather events, fire or explosions, and power outages.

3.1 SEVERE WEATHER CONDITIONS

If severe weather conditions, such as hurricanes, are imminent, the operator shall cease leachate recirculation operations.

Following the severe weather event, the operator shall perform the following procedures:

- Inspect the leachate recirculation system and complete the inspection form.
- Upon confirming that the system is in operable condition, proceed with leachate recirculation operations by opening the valves to allow flow to the injection pipelines and for surface applications proceed with leachate spraying. For leachate injection pipelines, the system is deemed to be in operable condition if a visual inspection of the system does not reveal any broken or damaged pumps, piping, valves, or fittings. Once the system is restarted, the system should be visually inspected again to ensure that there is no leakage due to unseen damage.
- If the inspection of the leachate recirculation system indicates damage that could impact proper leachate recirculation operation, the leachate shall be trucked to an alternative facility, as necessary, until repairs can be completed.

3.2 FIRE OR EXPLOSION

In the event of a fire or explosion at the landfill, the leachate recirculation operations shall be shut down until the fire has been successfully extinguished or it has been verified that there is no further danger of explosion.

3.3 EMERGENCY CONTACTS

In the event of an emergency, the list of contacts includes the following:

Emergencies:	911
Fire Services	(407) 348-2222
Rescue Squad	(407) 343-7000
Hospital	(407) 846-4343
JED Solid Waste Management Facility Site Manager:	(407) 891-3720
Florida "Hot Line"	(904) 488-1320
Florida Department Environmental Protection (FDEP)	(407) 894-7555
FDEP Solid Waste Division	(407) 893-3328

PERSONNEL AVAILABILITY

No recirculation operations should be conducted unless staff is available to correctly perform the activities and daily inspections, as described in this Operations Plan. “Paste Special Unformatted” instead of “Paste” to avoid bringing in unwanted or corrupt styles.

OPERATION AND MAINTENANCE PLAN FOR LEACHATE RECIRCULATION AT THE JED SOLID WASTE MANAGEMENT FACILITY

4. LIMITATIONS

Report Limitations

This document was prepared solely for Waste Services, Inc. in accordance with professional standards at the time the services were performed and in accordance with the contract between Waste Services, Inc. and Brown and Caldwell dated March 28th 2008. This document is governed by the specific scope of work authorized by Waste Services, Inc.; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Waste Services, Inc. and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

ATTACHMENT A

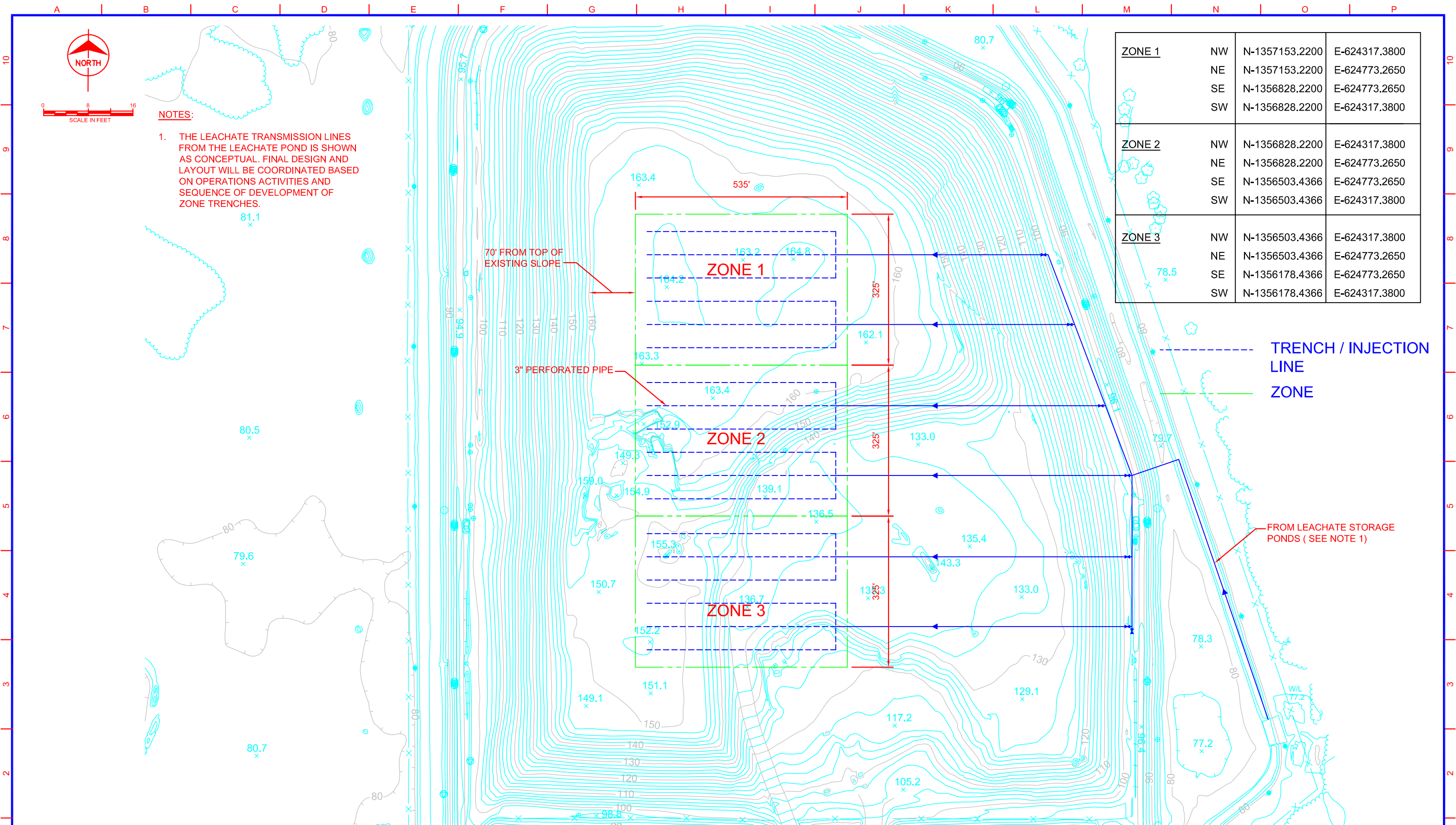
Figure 1 Cells 1 through 4 leachate recirculation layout

ATTACHMENT B

Data Collection and Inspection Form

ATTACHMENT C

Moisture Balance Calculations



NOTES:

1. THE LEACHATE TRANSMISSION LINES FROM THE LEACHATE POND IS SHOWN AS CONCEPTUAL. FINAL DESIGN AND LAYOUT WILL BE COORDINATED BASED ON OPERATIONS ACTIVITIES AND SEQUENCE OF DEVELOPMENT OF ZONE TRENCHES.

ZONE 1	NW	N-1357153.2200	E-624317.3800
	NE	N-1357153.2200	E-624773.2650
	SE	N-1356828.2200	E-624773.2650
	SW	N-1356828.2200	E-624317.3800
ZONE 2	NW	N-1356828.2200	E-624317.3800
	NE	N-1356828.2200	E-624773.2650
	SE	N-1356503.4366	E-624773.2650
	SW	N-1356503.4366	E-624317.3800
ZONE 3	NW	N-1356503.4366	E-624317.3800
	NE	N-1356503.4366	E-624773.2650
	SE	N-1356178.4366	E-624773.2650
	SW	N-1356178.4366	E-624317.3800

TRENCH / INJECTION
LINE
ZONE

FROM LEACHATE STORAGE
PONDS (SEE NOTE 1)

BROWN AND CALDWELL

Environmental Engineering and Consulting
850 Trafalgar Court, Suite 300, Maitland, Florida 32751, 407-661-9500 FBPE CA 2602

SUBMITTED: PROJECT MANAGER DATE:
APPROVED: BROWN AND CALDWELL DATE:
APPROVED: DATE:

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT 2" - SCALE ACCORDINGLY)

DESIGNED: H. SFEIR
DRAWN:
CHECKED: J. NISSEN
CHECKED:
APPROVED:

EXTERNAL REFERENCES

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

**JED LANDFILL
ST. CLOUD, FLORIDA**

CELLS 1 THROUGH 4

LEACHATE RECIRCULATION SYSTEM

(ELEV 170 FEET)

FILENAME
FIGURE 1
BC PROJECT NUMBER
SCALE
1/16" = 1'-0"
DRAWING NUMBER
SHEET NUMBER
OF

Leachate Recirculation Weekly Inspection Form

		Leachate Quantity Recirculated , gallons				
Day	Rainfall, inches	Zone 1	Zone 2	Zone 3	Cell 5	Inspection Comments
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						
Weekly Total						

Date Checked	Checked By	Job Number	By	Date	Calc No.	Sheet No.
5/19/2007	Jim Nissen	135146	H. Sfeir	5/19/2008	J1-020	1
Project			Subject			
JED Landfill Leachate Recirculation Operation Plan			Determine Quantity of Leachate Recirculation			

Objective

Determine quantity of leachate recirculation to reach in place waste density of 70 lbs/ft³ for in place waste from 2004 through 2007 at the JED landfill.

Assumptions

1. Equipment and technique used for waste compaction to remain unchanged.
2. Based on recent capacity reports submitted to FDEP, average density of waste and daily cover at the JED Landfill is 1750 lb/yd³ (65 lb/ft³).
3. Assuming second lift of waste is in place after 5 acres of waste placement.
4. Initial moisture content is assumed to be for Class I waste 20%, sludge 70%, soil 5% and C&D 5%. As a result of long term settlement and leachate recirculation, assume the moisture content of the waste will reach field capacity listed in Table 1 for each component of the waste stream.

Results

The composite density for leachate recirculation was calculated for various percentage of soil in the waste mass.

Table 1- Average tons of moisture addition to reach field capacity

Waste Composition, from 2004 through 2007	Percent Average Waste Composition by weight from 2004 through 2007	In place waste weight, tons	Average Initial Percent Moisture by Weight	Dry Waste Weight, tons	Conditions at field capacity, tons
Auto Fluff	7.20%	317,186	1%	314,014	348,904
C&D	5.37%	236,720	5%	224,884	249,871
Cont. Soil	26.59%	1,171,392	5%	1,112,822	1,236,469
ICI waste	6.53%	287,757	20%	230,206	328,865
Mulch	1.53%	67,179	10%	60,461	67,179
MSW	39.04%	1,719,772	20%	1,375,818	2,116,642
Sludge	7.26%	319,862	70%	95,959	137,084
Special Waste	6.39%	281,530	10%	253,377	281,530
Miscellaneous	0.04%	3,322	10%	2,989	3,322
Total	100%	4,404,720	17%*	3,670,530	4,769,868

* weighted average initial moisture content

Moisture increase to reach field capacity:

$$4,769,868 - 4,404,720 = 365,147 \text{ tons of liquid}$$

Adjusting for available moisture from sludge

$$365,147 - (319,862 - 137,084) = 182,369 \text{ tons of liquid}$$

Total gallons of moisture required to reach field capacity

$$(182,369 \text{ tons} \times 2000 \text{ lbs/ton} \times 7.48 \text{ gallons/ft}^3) / 62.4 \text{ lbs/ft}^3 = 43,721,799 \text{ gallons}$$

Date Checked	Checked By	Job Number	By	Date	Calc No.	Sheet No.
5/19/2007	Jim Nissen	135146	H. Sfeir	5/19/2008	J1-020	2
Project			Subject			
JED Landfill Leachate Recirculation Operation Plan			Determine Quantity of Leachate Recirculation			

Table 2 Initial and final estimated moisture content for leachate recirculation

	Percent by weight	lbs/yd ³	lb/ft ³
Initial Overall Moisture Content of in place waste	17%	1750	65
Final Moisture Content after leachate recirculation	23%	1895	70

To adjust for precipitation based on 55 inches/year and at 40% infiltration for the duration of 4 years and 3 days to fill one acre lift::

Volume of liquid that can be added to reach 70 lbs/ft³:

$$= 43,721,799 \text{ gallons} - 40\%(((55/365)/12)\text{ft} \times 43560 \text{ ft}^2/\text{acre} \times 286 \text{ working days/yr} \times 4 \text{ yrs} \times 3\text{days/acre-lift} \times 5 \text{ acres}) \times 7.48 \text{ gallon/ft}^3)$$

$$= 15,638,034 \text{ gallons for } 4,404,720 \text{ tons of in place waste}$$

$$= 3.6 \text{ gallons/ton of waste}$$

~ 4 gallons/ton of waste

APPENDIX E

WASTE SOLIDIFICATION OPERATION PLAN



of Osceola County, LLC
1501 Omni Way
St. Cloud, Florida 34773

REQUEST FOR PERMIT MODIFICATION

OPERATION PERMIT

FDEP Operation Permit SO49-0199726-005
DEP ID Number: 89544 (WACS)

J.E.D. SOLID WASTE MANAGEMENT FACILITY

Prepared by:



15450 New Barn Road - Suite 304
Miami Lakes, FL 33014
Phone: (305) 728-7400

September 2008
Revised October 2008

Brenda Ann Smith & Clark
29 October 2008

TABLE OF CONTENTS

1. Introduction
2. Liquid and Semi-Liquid Waste Receipt
 - 2.1 Processing Customers
 - 2.2 Types of Wastes
3. Waste Solidification Operating Area and Processing Procedures
 - 3.1 Waste Solidification Operating Area
 - 3.2 Daily Incoming Volume
 - 3.3 Waste Processing
 - 3.4 Operator Training
 - 3.5 Equipment Cleaning
4. Testing and Record Keeping
 - 4.1 Overview
 - 4.2 Testing
 - 4.3 Record Keeping

Figures

Figure 1: Hazardous and Non-Hazardous Waste Screening Flow Diagram

Figure 2: General Layout of Waste Solidification Area

Attachments

Attachment A: Special Waste Reference Guide

Attachment B: Training Documentation

Attachment C: Paint Filter Test Method

Attachment D: Liquid Waste Processing Record

1. INTRODUCTION

HDR Engineering, Inc. (HDR) has prepared this Waste Solidification Operation Plan (WSO Plan) to describe waste solidification operations that will be performed at the J.E.D. Solid Waste Management Facility (JED Facility). The JED Facility is owned and operated by Omni Waste of Osceola County, LLC (Omni), a subsidiary company of Waste Services, Inc. (WSI). This WSO Plan has been prepared in accordance with the requirements of Rule 62-701 of the Florida Administrative Code (FAC) and serves as an addendum (Appendix E) to the permitted Operation Plan prepared by Geosyntec Consultants and dated 14 September 2007. The information included in this WSO Plan is not replacing information in the permitted Operation Plan. The J.E.D. Facility is currently operating in accordance with FDEP Permits Numbered SC49-0199726-004 and SO49-0199726-005, dated March 22, 2007, and subsequent permit modifications.

The intent of the WSO Plan is to describe activities and procedures that will be implemented by site operations personnel in performing waste solidification activities at the JED Facility. Omni intends to accept non-hazardous liquid and semi-liquid wastes at the JED Facility and solidify the wastes using solid waste materials presently accepted for disposal. Solid waste materials used to solidify the liquid and semi-liquid wastes will be those types that characteristically have higher moisture absorptive characteristics (i.e., auto shredder fluff, contaminated and clean soils, cement, lime and ash based wastes, and recovered screen materials (RSM)). Waste solidification operations will be performed within the lined limits of the Class I disposal area and solidified wastes will be transported and disposed at the active landfilling area.

2. LIQUID AND SEMI-LIQUID WASTE RECEIPT

2.1 Processing Customers

The transporter/generator of a liquid or semi-liquid waste to the JED Facility will be approved by Omni prior to delivery and acceptance. Liquid and semi-liquid waste streams will be screened in accordance with Omni's special waste acceptance policy to confirm the wastes are non-hazardous in accordance with State and Federal regulations. A copy of the Special Waste Reference Guide is presented in Attachment A. A typical hazardous and non-hazardous waste screening flow diagram is shown on Figure 1. As part of Omni's special waste acceptance policy, Omni requires a non-hazardous waste manifest be generated for all special waste streams. This requirement will include liquid and semi-liquid wastes accepted for solidification. Generally, non-hazardous waste manifests must be received at the JED Facility 24-hours prior to delivery to allow review and approval by Omni site personnel or a 3rd party consultant contracted by Omni.

Upon entering the site, the transporter/generator of the liquid or semi-liquid waste will be required to stop at the weigh scales. The transporter/generator will be required to provide the scale house attendant a copy of an Omni approved non-hazardous waste manifest. All waste will be weighed upon entering the site. The weigh scale attendant will record the weight, type of waste, and transporter/generator information. The weigh scale attendant will then contact appropriate site personnel to notify them that a load of liquid or semi-liquid waste has been received and will direct the driver to the waste solidification area to be received by a spotter. The spotter will direct the customer to the specific offloading location and will monitor offloading activities.

2.2 Types of Wastes

As previously noted, wastes accepted for solidification will be liquid and semi-liquid wastes that are classified as non-hazardous according to State and Federal regulations. Typical wastes may include pumpings from maintenance and cleaning of septic systems, oil/water separators, drainage inlets, and other types of collection systems. Other wastes may include by-products and waste waters generated from industrial manufacturing activities, drilling fluids, bilge waters, and groundwater/soil contamination remediation activities.

3. WASTE SOLIDIFICATION OPERATING AREA AND PROCESSING PROCEDURES

3.1 Waste Solidification Operating Area

The waste solidification operating area will be clearly designated with visible signs at the site. Signage for the incoming traffic will be provided to direct them to the waste solidification operating area. The GPS co-ordinates of the solidified waste disposal locations within the Cell footprint will be recorded. This data will be maintained at the site and be readily available during Department inspections.

Liquid and semi-liquid wastes will be discharged only at the area designated for solidification operations. The designated area will be located within the limits of a lined disposal area which has been approved by the FDEP for Class I landfilling operations. The designated area will be relocated as necessary as landfilling operations progress. An ideal location will be an easily accessible flat area separate from the daily active landfilling operations. A typical layout of the waste solidification operating area is shown on Figure 2. As shown on Figure 2, the area will include water-tight solidification containers (i.e., 20-40 cubic yard roll-off or similar containers) for solidification of the liquid and semi-liquid wastes. Additionally, sufficient area surrounding the solidification containers will be provided to stockpile solid waste materials that will be used for the absorptive media and sufficient area for staging of equipment used to mix the waste streams and load out for transport to the active landfilling area. The dimensions and number of solidification containers shown on Figure 2 are approximate and will be adjusted as necessary based on the incoming quantities of liquid and semi-liquid wastes and other operating needs.

The landfill grades surrounding the waste solidification area will be graded to provide stormwater drainage away from the area. All weather access roads will be constructed to the area and maintained for safe access by customers. Grading and base material will be provided in areas adjacent to the solidification containers as needed to provide a firm stable working area for heavy equipment used in the waste solidification operations. The water tight containers will be slightly raised above the surrounding waste elevation to further prevent surface water run-off into the containers. Raised containers will also help prevent spillage of the liquid waste onto the surrounding landfill surface.

In accordance with the requirements of Rule 62-701.500(1) of the FAC, at least one trained spotter will be on duty in this area during discharge of the liquid waste.

3.2 Daily Incoming Volume

Daily incoming volumes of liquid and semi-liquid wastes accepted for solidification will depend on the following factors: 1) Market availability of liquid and semi-liquid wastes; 2) The number of solidification containers stationed at the area for processing of incoming wastes; 3) Available volumes of solid waste solidification materials for use as the absorptive media; 4) The time necessary to solidify the wastes and complete testing; and 5) Weather conditions. It is anticipated that the site will have an approximately five 20-40 cubic yard solidification containers available for processing liquid and semi-liquid wastes and any one time. If necessary, Omni may station portable water-tight Frac storage tanks near the solidification area to temporarily store liquid and semi-liquid

wastes if volumes are expected to exceed the daily solidification capabilities on a short term basis. Solidification operations will not occur during extreme wet weather conditions.

3.3 Waste Processing

Following initial processing at the weigh scale, the liquid or semi-liquid waste will be discharged into the solidification containers under a controlled flow rate to reduce splashing and overspill. Discharge operations will be monitored by the spotter to ensure liquid waste is discharged into the containers and not onto the surrounding landfill area, and to confirm the waste matches the description on the non-hazardous waste manifest. The spotter will notify the site Operator (trained and responsible for solidification operations) that a load has been received and is ready to be processed. The site Operator will complete solidification operations as described below by the end of that working day. There will be no overnight storage of liquid or semi-liquid wastes in the water tight containers.

A sufficient quantity of solid waste solidification material will be stockpiled in the area near the solidification containers. The types of materials that may be used for solidification include, but will not necessarily be limited to, auto shredder fluff, contaminated and clean soils, cement, lime and ash based waste streams, recovered screen materials (RSM), and other moisture absorptive materials received at the site for disposal.

Equipment used for processing will typically include an excavator or backhoe to place and mix the solid waste solidification materials in the water tight containers, and heavy earthmoving trucks to transport solid waste solidification materials to the solidification area and haul solidified waste to the active disposal area. These types of equipment are currently available at the JED Facility and will be used as needed to support solidification operations. Additional equipment will be purchased or rented if necessary to support operations.

The liquid or semi-liquid waste solidification process will consist of the following steps:

- Estimating the amount of liquid or semi-liquid waste and solid waste solidification material that can be added to the water tight container to avoid overfill. This estimate will be based on field practice as the site Operator becomes familiar with the absorptive characteristics of various solid waste types;
- Understanding the characteristics of the liquid or semi-liquid waste to be placed in the containers to ensure potentially incompatible wastes are not placed in the solidification containers at the same time;
- Placing the appropriate amount of liquid or semi-liquid waste in the water tight containers;
- Adding and mixing solid waste solidification materials to the liquid or semi-liquid waste;
- Allowing time for curing or absorbing of the wastes, and remixing if necessary;

- Testing of the solidified wastes to determine if acceptable for disposal at the active landfilling area;
- Adding and mixing of additional solid waste solidification materials if testing fails; and
- Retesting of remixed and solidified waste.

As noted above, once the liquid or semi-liquid waste is stabilized, the waste will be tested as described in the following Section. If testing confirms the solidified waste meets the minimum standards for classification as a solid waste, the waste will be loaded onto heavy earthmoving trucks and hauled to the active landfilling area for disposal in accordance with the permitted Operation Plan.

3.4 Operator Training

Employees that perform the mixing of the liquid wastes with the stabilizing materials will be required to go through a training program. The program will include training on the following: (i) discharge of liquid waste to the waste solidification containers; (ii) placement of the stabilizing materials in the waste solidification containers; (iii) mixing of the liquid waste and stabilizing materials; (iv) testing of stabilized wastes; (v) procedures when materials are not properly stabilized; (vi) removal of stabilized waste from the waste solidification containers; (vii) disposal of stabilized waste at the active waste disposal area; (viii) proper maintenance of the waste solidification area; and (ix) proper usage of all equipment involved in the operations. Training documentation is presented in Attachment B. The documentation will be maintained at the site.

3.5 Equipment Cleaning

It is not anticipated that cleaning of the containers used for the waste solidification operation will be required. Any liquid materials placed in the containers will be solidified. All solidified materials will be removed from the container.

Should cleaning of the equipment used for the waste solidification operation be required, it may be performed with water. The cleaning can be performed such that the equipment is suspended over the waste solidification containers and sprayed with water. The water will collect in the container and be mixed with incoming liquid wastes and solidification materials.

4. TESTING AND RECORD KEEPING

4.1 Overview

Upon completion of the mixing of the liquid or semi-liquid waste with the solid waste solidification materials, the waste will be allowed to cure, if necessary. The length of the curing period will be dependent upon the type of liquid or semi-liquid waste and the solid waste solidification material used. In some instances, a curing period may not be required. The site Operator will visually monitor the wastes during mixing and curing period to confirm the processed wastes are relatively consistent prior to retrieving a sample for testing.

4.2 Testing

A trained site employee will perform testing of solidified wastes as described below. The site Operator will use the excavator or backhoe to scoop loads of solidified waste from the solidification container. A composite sample will be obtained by collecting three approximately 100-milliliter (mL) samples from different areas of the processed waste. The three samples will be mixed together and approximately 100 mL of the composite sample will be tested according to United State Environmental Protection Agency Paint Filter Liquids Test Method 9095B. A copy of this test method is included in Attachment C. A schematic of the test apparatus is also included in Attachment C.

The test procedure consists of the following:

- Assemble ring, ring stand, funnel, conical paint filter (mesh number 60, or fine mesh), and receiving graduated cylinder or beaker;
- Deposit 100 mL, or 100 milligrams, of the composite waste sample in the filter;
- Allow the sample to drain for at least 5 minutes, recording start and finish times;
- Check graduated cylinder or beaker below funnel to determine if liquid passed through the filter; and
- Record test result of liquid passing through filter and into graduated cylinder or breaker.

If no liquid passes through the paint filter and drips into the receiving graduated cylinder or beaker, the processed waste is defined as containing no free liquids. A processed waste that is determined to contain no free liquids will be removed from the liquid waste processing area and transported to the active landfilling area and disposed in accordance with the procedure outlined in the Operation Plan. If any liquid drips from the funnel into the receiving graduated cylinder or beaker, the waste is defined as containing free liquids and must be reprocessed and retested until it contains no free liquids.

Training for employees performing the paint filter testing will be performed by a third party consulting or testing company. Subsequent training of new employees will also be performed by a third party.

4.3 Recordkeeping

Information regarding the receipt and processing of each shipment of liquid waste will be recorded on the sample form included as Attachment D. All completed forms, including non-hazardous manifests, and training records will be filed and maintained at the JED Facility administration office. The records shall be maintained for the design period of the landfill.

ATTACHMENT A

SPECIAL WASTE REFERENCE GUIDE

SPECIAL WASTE REFERENCE GUIDE

A. OVERVIEW

The federal government agency responsible for dealing with air, water, and soil pollution is the Environmental Protection Agency (EPA). It headquarters in Washington, D.C. and is divided into ten regional offices, each of which is headed by a Regional Administrator. The following are individual pieces of federal legislation addressing the management of solid and hazardous waste.

Resource Conservation and Recovery Act (RCRA)

The Solid Waste Disposal Act (SWDA), enacted in 1965, was the first federal legislation that addressed the nation's solid waste management practices. RCRA was enacted in 1976, as an amendment to the SWDA, but it completely rewrote the earlier act. In 1984, the Hazardous and Solid Waste Amendments (HSWA) amended RCRA by adding restrictions on the land disposal of certain wastes, corrective action requirements and underground storage tank (UST) regulations. These three acts, SWDA, RCRA and HSWA, are commonly referred to as RCRA.

The purpose of RCRA was to regulate the disposal of waste on the land. The Act required that the EPA promulgate regulations that were designed to protect human health and the environment with respect to the land disposal of waste.

The regulations promulgated under RCRA can be found in the Code of Federal Regulations, Title 40, (40 CFR) in Parts 247 through 280. The act is divided into sections called subtitles, and hazardous wastes are regulated under the *Subtitle C* program, from generation through use and disposal. Municipal Solid Waste and Industrial Solid Waste are managed under the *Subtitle D* program, and leaking underground storage tanks are addressed in the *Subtitle I* program. Key sections pertaining to the identification of hazardous waste are listed below:

PART NO.	SUBJECT
260	Definitions associated with solid and hazardous waste
261	Identification and listing of hazardous waste
268	Land Disposal Restrictions
280	Underground Storage Tank (UST) – Technical Standards and Corrective Action Requirements

RCRA Subtitle D Rule

The EPA promulgated regulations addressing Municipal Solid Waste Landfill criteria in October 1991. These regulations were promulgated under Subtitle D of the Resource Conservation and Recovery Act or (RCRA) and are commonly referred to as the "Subtitle D Rules." The regulations are found in the Code of Federal Regulations, Title 40, Part 258 (40 CFR §§258).

The regulations apply to owners and operators of all municipal solid waste landfills that receive waste after October 9, 1993. Landfills that stopped accepting waste before October 9, 1991, are not affected by these regulations.

The regulations apply to landfills that accept municipal solid waste. They do not apply to units (including landfills, surface impoundments, waste piles, and land applications units) that accept only industrial non-hazardous waste.

The regulations establish comprehensive, protective standards for managing solid waste by specifying:

- location provisions (defining areas where landfills are prohibited)
- design standards (liners & leachate collection systems)
- operating requirements (random hazardous waste inspection procedures, daily cover requirements, record keeping, water management)
- closure and post-closure requirement (designed cover systems, financial assurance for 30 years)

RCRA Solid and Hazardous Waste

The Resource Conservation and Recovery Act (RCRA) and regulations promulgated in accordance with the Act (code of Federal Regulations, Title 40, Part 260-261), define both solid and hazardous waste.

The regulations in 40 CFR §261 set forth the procedures for evaluation of each waste material to determine if the waste is a hazardous waste.

RCRA SOLID WASTE

Solid waste is not a scientific term but a regulatory one. In fact, solid waste may not be in the solid state at all. For instance, a liquid waste in a 55-gallon drum is a solid waste. So is a bulk liquid waste stored in a tank. A gaseous waste which is stored in a compressed gas cylinder is a solid waste. The definition of solid waste found in RCRA.

Each generator of solid waste has the responsibility of characterizing their waste streams. To do that they must consider many things. What processes do they come from? What raw materials or other chemicals go into them? What chemical reactions, if any, have taken place? How many pounds or tons or gallons per hour are generated? What characteristics do they exhibit? Is it a listed chemical or process?

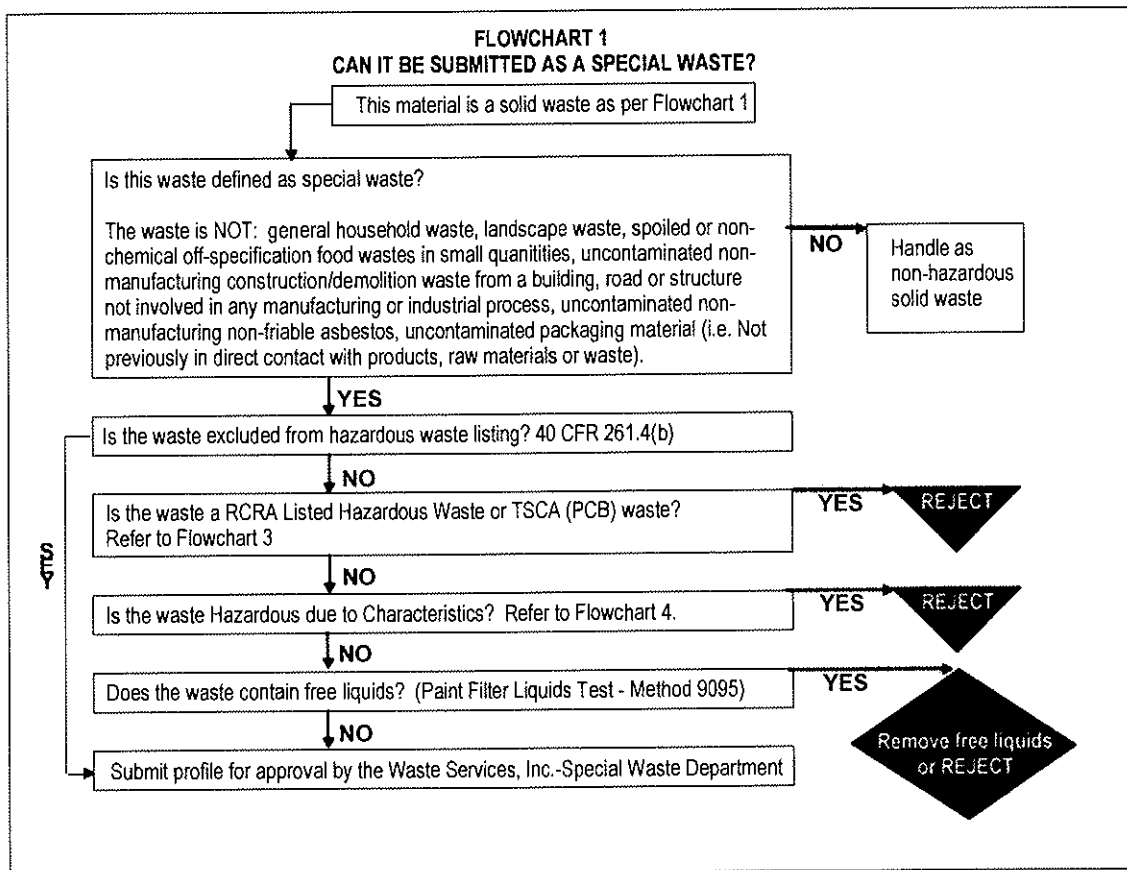
The first step in evaluating a material for management is to determine if the material is a solid waste as set forth in 40 CFR 260-261. Flowchart 1, entitled "Solid Waste Decision Tree" outlines this first step. Once the waste is characterized as a solid waste, Flowchart 2 – Special Waste Acceptance Decision Tree is used to complete the waste classification process.

RCRA HAZARDOUS WASTE

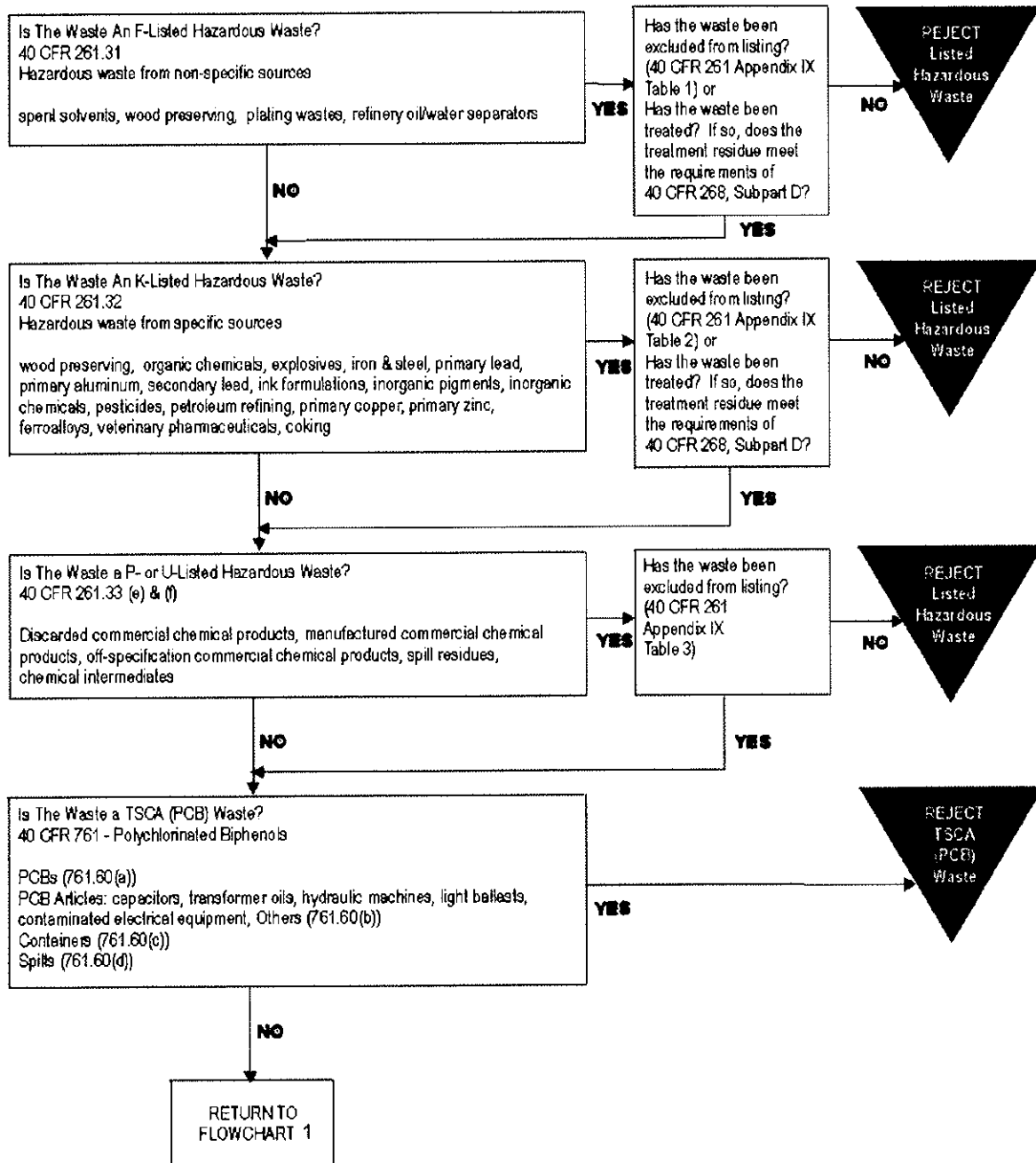
Determining whether a waste is a RCRA hazardous waste is perhaps one of the most complex steps within the RCRA regulations. The regulations found in 40 CFR Part 261 use a step-by-step identification process. A solid waste is characterized as a hazardous waste in one of two ways:

1. It exhibits the characteristics of a hazardous waste; or is a “*characteristically hazardous waste*”.
2. It is listed by the EPA as a hazardous waste either by process or as a pure product, termed a “*listed hazardous waste*”.

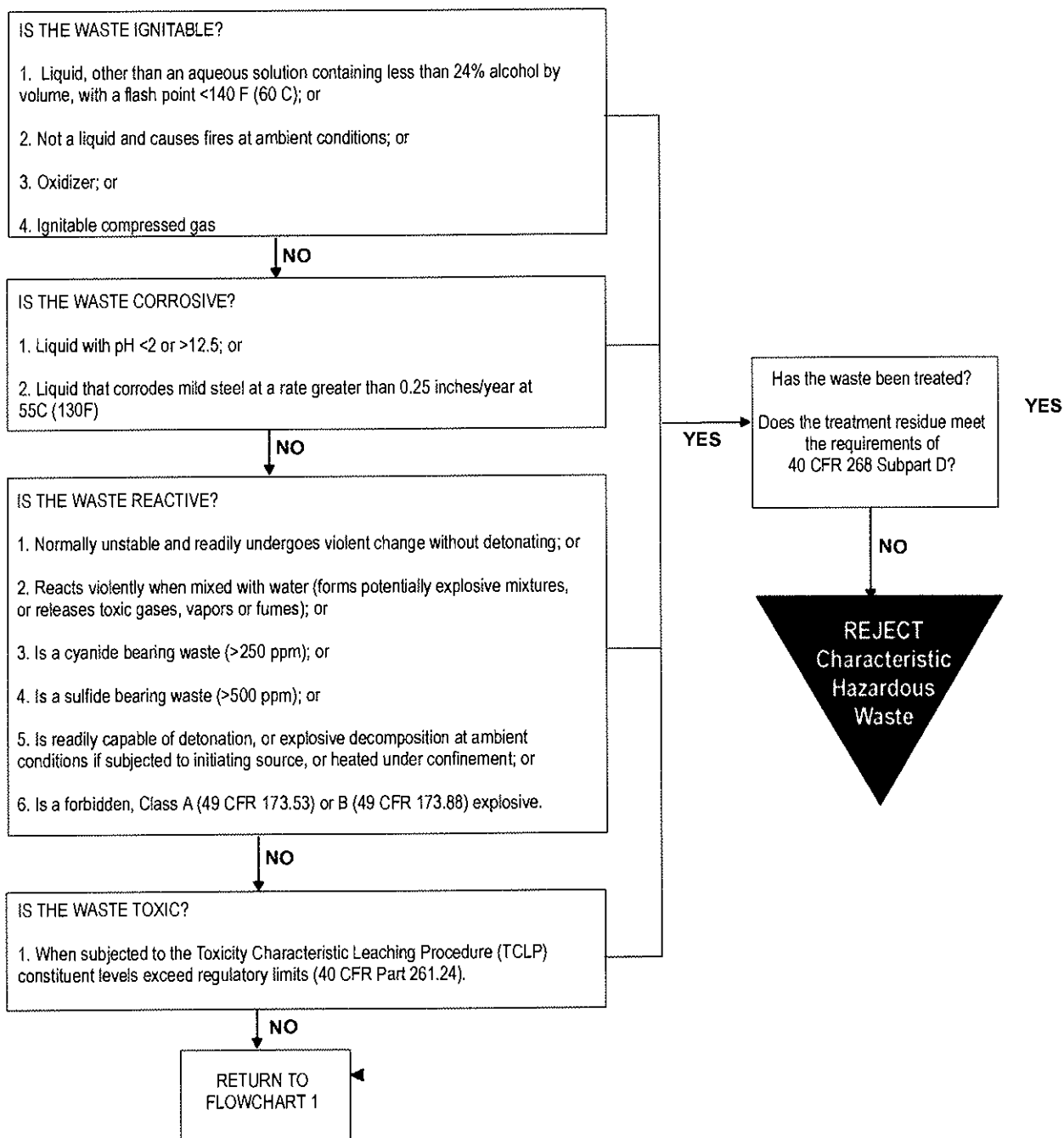
The process used to evaluate a waste for characteristics and listings is outlined in Flowcharts 2 and 3 entitled “Hazardous Waste Determination – Listings” and “Hazardous Waste Determination – Characteristics”.



**FLOWCHART 2
HAZARDOUS WASTE DETERMINATION
LISTINGS**



**FLOWCHART 3
HAZARDOUS WASTE DETERMINATION
CHARACTERISTICS**



Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act (TSCA) was passed in 1976 to ensure the protection of human health and the environment from toxic chemical substances. The regulations promulgated under TSCA are found in the Code of Federal Regulations, Title 40, Parts 700 to the end. TSCA applies to pure chemical substances, impurities and contaminants found in chemicals and incidental reaction products formed when a compound is manufactured or when it is used. The most common toxic constituent evaluated with regard to WSI's special waste, are polychlorinated biphenyls (PCBs), regulated under TSCA at 40 CFR Part 761.

Clean Water Act (CWA)

The Federal Water Pollution Control Act (FWPCA) amended by the Clean Water Act Amendments of 1977, establishes the standards and requirements for the protection of the nation's waters. One of the key components under Section 402 of the Act is the requirement to have the EPA administer a national permit program for the regulation of discharge of pollutants into waters of the United States. The national permitting program established by the EPA is known as the National Pollutant Discharge Elimination System (NPDES). Regulations promulgated in response to the requirements of the CWA are found in the Code of Federal Regulations, Title 40, Parts 100-149 and 400-699 (40 CFR §§100-149; §§400-699).

Although the regulations promulgated under the CWA do not directly effect WSI's special waste acceptance criteria, the regulations set standards and requirements for our business partners. Major components of CWA regulations include:

PART NO.	SUBJECT
117	Wetlands
122	Discharge Permits
403	Pretreatment Regulations for Publicly Owned Treatment Works (POTWs)
323	Dredge and Fill Operations
131	Water Quality Standards
---	Wastewater Treatment Plant Sludge Management (Section 503)
---	Oil and Hazardous Substance Discharges

Superfund

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) are commonly referred to as SUPERFUND.

CERCLA, passed in 1980, established the policies to clean up hazardous waste sites used for the improper disposal of hazardous waste. A 1979 survey estimated between 30-50 thousand sites existed. The intent of CERCLA was to accomplish the following:

- Development of a national inventory of inactive hazardous waste sites (National Priorities List – NPL).
- Definition of requirements to protect human health environmental response actions and the environment (National Contingency Plan).

- Establishment of a fund to finance the clean-up of sites.
- Establishment of a payback system for costs by liable parties (Potentially Responsible Parties (PRPs)).

Regulations promulgated in response to CERCLA are found in the Code of Federal Regulations, Title 40, Parts 300-399 (40 CFR §§330-399).

SARA, passed in 1986, amended CERCLA by providing the following:

- Additional funding for cleanups.
- Scheduling of EPA cleanup activities.
- Establishment of national cleanup standards for Superfund sites.
- Cleanup of sites owned by the federal government.
- Requirements for research and training on hazardous substances.
- Authority for EPA to enter into settlements with responsible parties.
- Citizen's rights to participate in cleanup decisions.
- Enhancement to EPA response and enforcement authority.
- Strength to the role of the Toxic Substance and Disease Registry Agency.
- Establishment of standards for the cleanup of leaking USTs in which responsible parties are unknown.

Regulations promulgated under SARA amend CERCLA regulations found at 40 CFR §§300-399.

“Corrective Action Soils” – Petroleum Contaminated Soils

As a result of significant press and public attention in the 1980s, regarding the “unaddressed source of groundwater contamination,” leaking underground petroleum storage tanks, EPA developed regulations for underground storage tanks (USTs) to prevent, detect and correct releases.

The UST regulations are found in the Code of Federal Regulations, Title 40, Part 280. In summary, the regulations set standards from installation to closure for owners and operators of certain USTs. The standards include:

- Tank design, construction, installation and notification requirements.
- General operating requirements.
- Release detection.
- Release reporting, investigation, and confirmation.
- Release response and corrective action requirements.
- Closure requirements.
- Financial responsibility requirements.

The soils resulting from corrective action typically are the petroleum contaminated soils generated from corrective action requirements initiated under 40 CFR 280.

ATTACHMENT B

TRAINING DOCUMENTATION

TRAINING DOCUMENTATION

My signature below indicates that I participated in the waste solidification training program at the J.E.D. Solid Waste Management Facility. As part of this program, I have been trained to perform the following activities (indicate by placing initials next to items for which you have received training):

- _____ Liquid waste discharge to waste solidification tank
- _____ Placement of stabilizing materials in the waste solidification tank
- _____ Mixing of liquid waste and stabilizing materials
- _____ Testing of solidified wastes
- _____ Procedures to follow when waste solidification is not complete
- _____ Removal of solidified waste from the solidification containers
- _____ Disposal of solidified waste at the active waste disposal area
- _____ Proper maintenance of the waste solidification area
- _____ Proper operation of all required equipment

Employee Signature

Date

Supervisor Signature

Date

ATTACHMENT C

PAINT FILTER TEST METHOD

METHOD 9095B

PAINT FILTER LIQUIDS TEST

1.0 SCOPE AND APPLICATION

1.1 This method is used to determine the presence of free liquids in a representative sample of waste.

1.2 The method is used to determine compliance with 40 CFR 264.314 and 265.314.

2.0 SUMMARY OF METHOD

2.1 A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5-min test period, the material is deemed to contain free liquids.

3.0 INTERFERENCES

3.1 Filter media were observed to separate from the filter cone on exposure to alkaline materials. This development causes no problem if the sample is not disturbed.

3.2 Temperature can affect the test results if the test is performed below the freezing point of any liquid in the sample. Tests must be performed above the freezing point and can, but are not required to, exceed room temperature of 25 °C.

4.0 APPARATUS AND MATERIALS

4.1 Conical paint filter -- Mesh number 60 +/- 5% (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden.

4.2 Glass funnel -- If the paint filter, with the waste, cannot sustain its weight on the ring stand, then a fluted glass funnel or glass funnel with a mouth large enough to allow at least 1 in. of the filter mesh to protrude should be used to support the filter. The funnel should be fluted or have a large open mouth in order to support the paint filter yet not interfere with the movement, to the graduated cylinder, of the liquid that passes through the filter mesh.

4.3 Ring stand and ring, or tripod.

4.4 Graduated cylinder or beaker -- 100-mL.

5.0 REAGENTS

5.1 None.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

A 100-mL or 100-g representative sample is required for the test. If it is not possible to obtain a sample of 100 mL or 100 g that is sufficiently representative of the waste, the analyst may use larger size samples in multiples of 100 mL or 100 g, i.e., 200, 300, 400 mL or g. However, when larger samples are used, analysts shall divide the sample into 100-mL or 100-g portions and test each portion separately. If any portion contains free liquids, the entire sample is considered to have free liquids. If the sample is measured volumetrically, then it should lack major air spaces or voids.

7.0 PROCEDURE

7.1 Assemble test apparatus as shown in Figure 1.

7.2 Place sample in the filter. A funnel may be used to provide support for the paint filter. If the sample is of such light bulk density that it overflows the filter, then the sides of the filter can be extended upward by taping filter paper to the inside of the filter and above the mesh. Settling the sample into the paint filter may be facilitated by lightly tapping the side of the filter as it is being filled.

7.3 In order to assure uniformity and standardization of the test, material such as sorbent pads or pillows which do not conform to the shape of the paint filter should be cut into small pieces and poured into the filter. Sample size reduction may be accomplished by cutting the sorbent material with scissors, shears, a knife, or other such device so as to preserve as much of the original integrity of the sorbent fabric as possible. Sorbents enclosed in a fabric should be mixed with the resultant fabric pieces. The particles to be tested should be reduced smaller than 1 cm (i.e., should be capable of passing through a 9.5 mm (0.375 inch) standard sieve). Grinding sorbent materials should be avoided as this may destroy the integrity of the sorbent and produce many "fine particles" which would normally not be present.

7.4 For brittle materials larger than 1 cm that do not conform to the filter, light crushing to reduce oversize particles is acceptable if it is not practical to cut the material. Materials such as clay, silica gel, and some polymers may fall into this category.

7.5 Allow sample to drain for 5 min into the graduated cylinder.

7.6 If any portion of the test material collects in the graduated cylinder in the 5-min period, then the material is deemed to contain free liquids for purposes of 40 CFR 264.314 and 265.314.

8.0 QUALITY CONTROL

8.1 Duplicate samples should be analyzed on a routine basis.

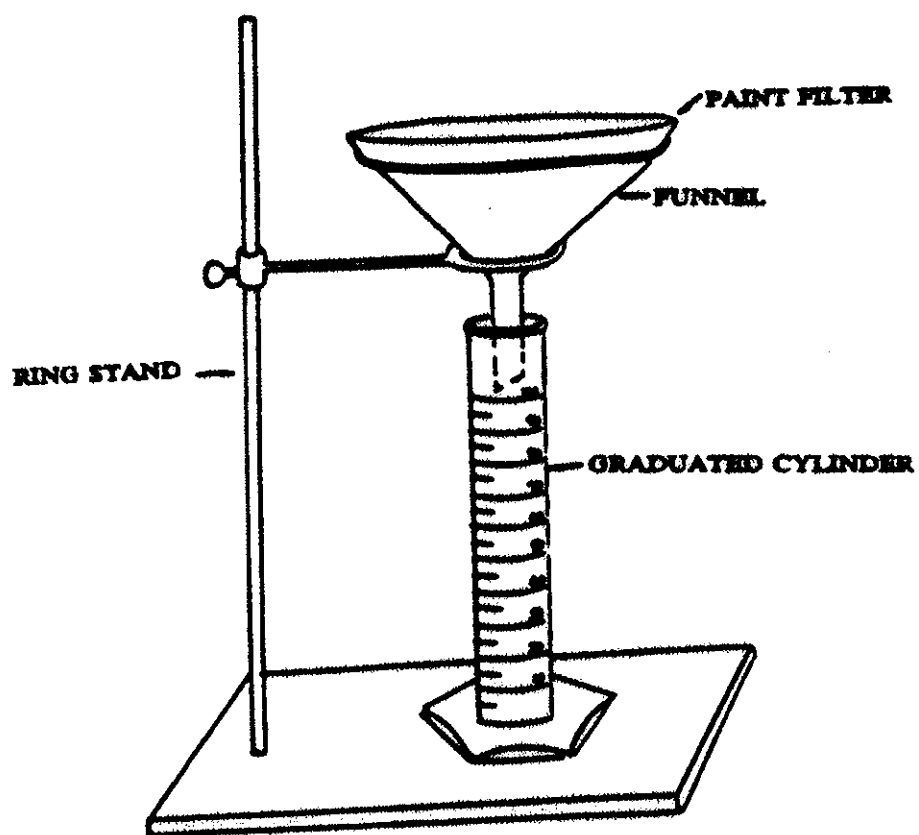
9.0 METHOD PERFORMANCE

9.1 No data provided.

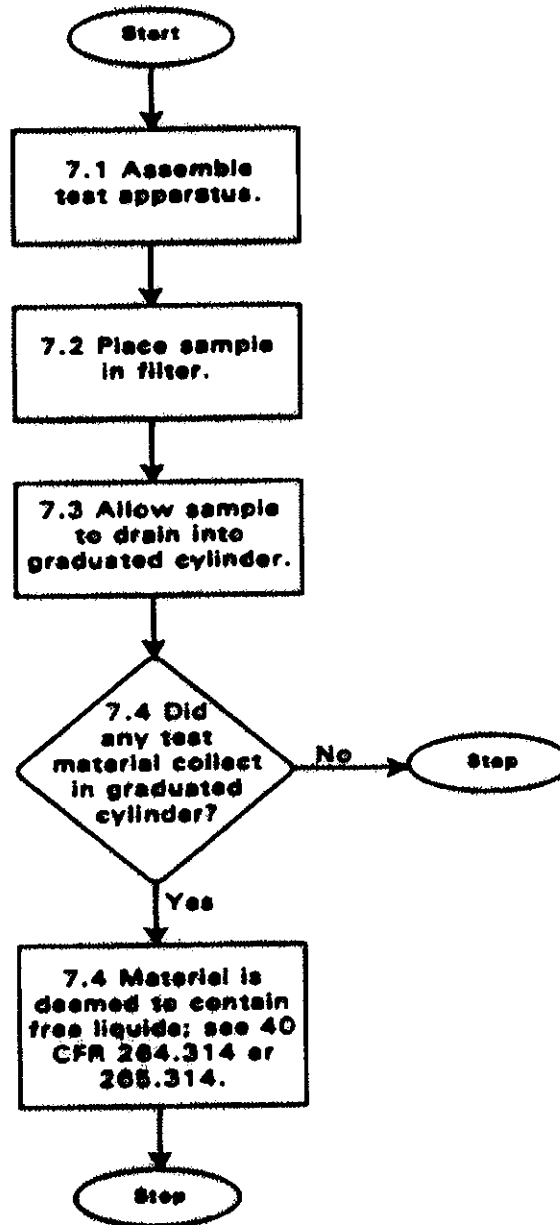
10.0 REFERENCES

10.1 None provided.

FIGURE 1
PAINT FILTER TEST APPARATUS



METHOD 9095B
PAINT FILTER LIQUIDS TEST



ATTACHMENT D

LIQUID WASTE PROCESSING RECORD

J.E.D. Solid Waste Management Facility

LIQUID WASTE PROCESSING RECORD

Date: _____

Received by: _____

WASTE TRANSPORTER

Company: _____

Driver's Name: _____

Truck ID Number or License Number: _____

Waste Quantity: _____

Waste Type: (check all that apply)

sludge: _____

grit trap: _____

grease trap: _____

other: _____

Explain Other: _____

WASTE PROCESSING

Date: _____

Bulking/Stabilizing Agents: _____

Approximate Volume of Liquid Waste: _____

Approximate Volume of Bulking/Stabilizing Agent: _____

Approximate Time to Stabilize: _____

PAINT FILTER LIQUIDS TEST

Test run by: _____

Test start time: _____

Test end time: _____

Length of test: _____ minutes (Note: Test must run at least 5 minutes)

Any liquid observed in graduated cylinder or beaker below funnel?

_____ No PASS - Processing complete, compact and cover waste.

_____ Yes FAIL - Waste must be retested after additional processing/curing time.

DUPLICATE SAMPLE TESTING

(One duplicate test for every five regular tests)

Test run by: _____

Test start time: _____

Test end time: _____

Length of test: _____ minutes (Note: Test must run at least 5 minutes)

Any liquid observed in graduated cylinder or beaker below funnel?

_____ No

_____ Yes

APPENDIX F

LANDFILL GAS TO ENERGY FACILITY

OPERATION PLAN



LANDFILL GAS TO ENERGY FACILITY OPERATION PLAN

J.E.D. Solid Waste Management Facility Osceola County, Florida

Submitted to: Florida Department of Environmental Protection
Waste Management Program, Tallahassee
2600 Blair Stone Road, MS 4565
Tallahassee, FL 32399 USA

Prepared for: Omni Waste of Osceola County, LLC
1501 Omni Way
St. Cloud, FL 34773 USA

Submitted by: Golder Associates Inc.
9428 Baymeadows Road, Suite 400
Jacksonville, FL 32256 USA

Florida Board of Professional Engineers
Certificate of Authorization Number 1670

Distribution:

1 Copy	Florida Department of Environmental Protection Waste & Air Resource Programs, Central District
2 Copies	Omni Waste of Osceola County, LLC
1 Copy	Golder Associates Inc.

October 2014
Revised November 2014

083-82734.37

A world of
capabilities
delivered locally





Table of Contents

1.0	OPERATION PLAN.....	1
1.1	Introduction.....	1
1.2	LFGTE Facility General Information.....	1
1.3	Facility Operations	2
1.4	Facility Safety.....	3
1.4.1	Fire Alarm and Detection	3
1.4.2	Utility Power Protection.....	4
1.4.3	Combustible Gas Detection	4
1.4.4	Lightning Protection and Grounding System	5
1.4.5	Facility Monitoring.....	5
1.4.6	Facility Security.....	5
1.4.7	Emergency Response.....	6
1.5	Waste / By-product Management	6
1.5.1	Condensate Management.....	6
1.5.2	Waste Handling.....	6
1.5.2.1	Waste Oil.....	7
1.5.2.2	Hydrogen Sulfide Treatment Waste.....	7
1.6	Landfill Gas Conveyance	7
1.6.1	Blower and Flare Operation.....	7
1.7	LFGTE Facility Closure	8

List of Drawings

G0000	Cover Sheet
C100	Overall Site Plan
A901	Rendering – SW View
A001	General Information
A002	Life Safety Plan
FA101	Fire Alarm System Plan



1.0 OPERATION PLAN

1.1 Introduction

Golder Associates Inc. (Golder) has prepared this Landfill Gas to Energy Facility Operation Plan (LFGTE Plan) to describe the process and operations associated with the LFGTE Facility at the J.E.D. Solid Waste Management Facility (J.E.D. Facility). Information included in this LFGTE Plan will be incorporated as Appendix F to the approved Operation Plan prepared by Geosyntec Consultants dated November 10, 2011 (note that this replaces the former Appendix F – Auto Shredder Residual (ASR) Recycling Plan since the ASR Recycling operations have ceased and been removed from the facility).

1.2 LFGTE Facility General Information

The proposed LFGTE Facility will be located in an area south of the existing leachate holding ponds at the J.E.D. Facility. Drawings for the LFGTE Facility are included in Appendix 1. The LFGTE Facility will be owned and operated by Chicago Bridge and Iron Company (CB&I) under a long-term agreement with Omni Waste of Osceola County, LLC (Omni). CB&I will purchase landfill gas from Omni to generate electricity which will be sold to the Orlando Utilities Commission (OUC). The power will be wheeled to OUC via Duke Energy's transmission system that currently serves the J.E.D. Facility.

Landfill gas from the disposal area will be conveyed to the LFGTE Facility via a vacuum piping system and will then be treated and used as a fuel to generate electricity. At full build-out the LFGTE Facility will have a gross electrical generation capacity of approximately 19.2 megawatts (MW) of electricity and will consist of 12 Caterpillar (CAT) Model G3520C lean-burn internal combustion engines and generator sets. The LFGTE Facility will be constructed in phases with the initial phase consisting of 6 engine/generator sets with a gross electrical output of approximately 9.6 MW. Commercial operation of the initial phase is planned for September 2015. Expansion of the LFGTE Facility to the full capacity will be completed as increases in landfill gas flows allow. Phased installation of future engine/generator sets may occur in quantities of one or greater. Plant operation will be typically 24 hours per day, 7 days, per week.

The LFGTE Facility will consist of a metal building structure to house the CAT engines, electrical room, office control room, and maintenance shop. Exterior equipment will initially include a hydrogen sulfide treatment system, condensate management equipment, electrical switchgear and transmission facilities, and gas compressor/chiller equipment. In addition to the LFGTE Facility equipment, Omni will operate and maintain landfill gas conveyance piping, blowers and flare equipment in the general location of the LFGTE Facility. Omni's blowers will convey landfill gas to the LFGTE Facility and/or the flares when excess landfill gas is being produced or the LFGTE Facility is not in operation.



1.3 Facility Operations

CB&I will own and operate the LFGTE Facility (under a 20+ year contract with Omni). The LFGTE Facility will be operated generally 24-hours a day, 7 days per week, 52 weeks per year. Routine maintenance and over-haul may require partial or complete shutdown of the plant. Typically, the facility will be staffed 5 days per week. During times when no operator/staff is at the facility, a call-in procedure will be enacted automatically by the plant should an alarm or shutdown occur. Should a call-in occur for an upset or alarmed condition, the on-call operator will report to the plant for troubleshooting, repair, or other actions.

Landfill gas will be consumed as fuel in the Cat G3520C engine/generator sets to produce electricity which will be sold to OUC or other 3^d party purchaser. Landfill gas will be conveyed to the LFGTE Facility (and if needed flares) from the waste disposal area via a temporary header system installed along an existing partially constructed landfill perimeter berm. This existing berm contains the leachate force main and was constructed during relocation of the leachate holding facilities in 2012. Additional permanent header piping will be installed in the waste mass as the disposal area is developed. Landfill gas will be pulled under vacuum by blowers stationed at the LFGTE Facility area as shown on attached Drawing C100. The landfill gas will be treated for moisture (moisture conditioned) at the blower skid system prior to being either routed to the hydrogen sulfide (H₂S) treatment system or flares. Moisture conditioning equipment at the blower skid system will consist of a buried knockout sump, and aboveground demisters and knockout pots positioned before blowers. No further moisture conditioning equipment is anticipated at the flares. Landfill gas that requires treatment for H₂S will be routed from the blower system to the H₂S treatment system. After H₂S treatment landfill gas will be routed to the LFGTE Facility where additional compression and moisture conditioning may occur prior to consumption in the CAT engine/generator sets. Excess landfill gas that has been treated for H₂S and not consumed by the CAT engine/generator sets will be routed to the flares. Under certain air permit conditions landfill gas may not require H₂S treatment prior to destruction at the flares. In those circumstances landfill gas will be routed directly from the blower system to the flares, bypassing the H₂S treatment system. Routing of landfill gas to various treatment and end equipment will occur using automated bypass valves, pressure transducers and other system logic. Omni will maintain a 100% capacity of thermal destruction by flares in case of a complete plant shutdown.

The LFGTE Facility will track the amount of total landfill gas used on an hourly basis and the rolling flow rate in standard cubic feet per minute (scfm). Additionally, the LFGTE Facility will maintain records of the total amount of electricity generated on an hourly basis and landfill gas quality as required by permit or otherwise desired.



1.4 Facility Safety

The LFGTE Facility will include a number of safety features including fire alarm and detection, combustible gas detection, lightning protection, utility power protection, and 24/7 monitoring of the facility operations. The following sections summarize these features.

1.4.1 Fire Alarm and Detection

The LFGTE Facility primary occupancy is classified per Florida Building code 2010 section 306.2 as F-1 Factory Industrial Moderate-Hazard occupancy with a secondary occupancy as B – Business. The F-1 occupancy shall be used since it is most restrictive use.

Per Florida Building Code 2010, Section 903.2.4 Group F-1, an *automatic sprinkler system* shall be provided throughout all buildings containing Group F-1 occupancy where one of the following conditions exists:

1. *Fire area* exceeds 12,000 square feet (1115 m²).
2. A Group F-1 *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group F-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

The LFGTE facility does not meet any of the 903.2.4 categories; therefore the facility shall not be required to be automatically sprinkled.

Additionally, per FBC 2010, section 907.2.4 Fire Alarm and Detection systems, Group F Fire alarm system is not required for industrial occupancies because the total capacity of the building is under 100 persons and fewer than 25 persons are above or below level of exit discharge.

See the attached HRG plan sheets A001 and A002 for additional details on the building classifications and personnel egress routes.

Although the LFGTE Facility is not required to have a Fire Alarm and Detection system, the LFGTE Facility has been otherwise designed with a system. It should also be noted that the LFGTE Facility building is constructed with minimum of combustible material so as to limit the propagation of fire. The building fire alarm and detection system consists of thermal detectors, smoke detectors, combustible gas detectors, audible and visual alarm devices, and manual fire pull stations. See HRG plan sheet FA101 for locations and details of fire detection system.

Upon any of the below listed alarms, the generator breakers will be tripped, the engine-generator sets will be shutdown and the gas inlet valve to the LFGTE Fuel Gas Skid will be closed in order to control the potential for fire and explosion within the plant:



- high oxygen in the fuel (as detected at the Fuel Gas Skid);
- fuel gas skid blower failure;
- air compressor failure;
- fire detection alarm; and
- high-high methane alarm.

A Plant Emergency Stop (APET) E-stop Pressed. There will be two (2) APET pushbuttons, one located at the internal side of main gate and the other will be at the fuel gas skid.

The facility will be equipped with type 2A portable fire extinguishers. There will be a total of six (6) portable fire extinguishers located in the facility: 3 in the engine room, 1 in the maintenance shop, 1 in the office, and 1 in the electrical room.

1.4.2 Utility Power Protection

When a power failure, short circuit, voltage or frequency disturbance occurs on the utility line, the event is detected by the Interconnection Protection Relay (SEL-351) which will initiate a trip to the utility breaker (52U-A). Opening breaker 52U-A will cause the generator breakers to trip and the gas compressor to shut down. Upon restoration of the utility line voltage, the on-call operator may close the utility breaker (52U-A), restart the gas compressor, and begin the process of restarting/re-synchronizing the generators to the utility.

Each generator is equipped with an automatic voltage regulator and an automatic power factor controller, and is also protected by a multi-function Generator Protection Relay (SEL-300G) against unbalanced current, instantaneous and time delay overcurrent, reverse power, loss of excitation, abnormal voltage, abnormal frequency, and faults that cause a flow of differential currents through the generator windings. Grounding of each generator is achieved through a neutral grounding resistor. The facility medium voltage distribution system is protected by transformer differential, bus differential, and overcurrent devices. The relays utilized at this plant are solid-state devices which are self-testing and therefore require no routine maintenance.

1.4.3 Combustible Gas Detection

The LFGTE Facility will be equipped with a combustible gas (methane) detection system which will continuously monitor ambient air in all facility rooms of the plant for the presence of unsafe atmospheres. The gas detection system control panel located in the control room, measures ambient atmosphere concentrations taken from all facility occupied spaces.

Methane gas is explosive only between certain concentrations. This explosive range is 5% to 15% methane in air. The 5% level is defined as the LOWER EXPLOSIVE LIMIT (LEL) and the 15% level is defined as the UPPER EXPLOSIVE LIMIT (UEL). Below the LEL, an explosion will not occur because



the concentration of methane is not high enough to support an explosion. Above the UEL, an explosion will not occur because the concentration of gas to oxygen is too rich to support an explosion. Methane concentration levels are indicated on the methane detection control panel from 0 to 100% of the LEL.

The methane detection unit will send alarms should the concentration of methane initiate the alarms as described in the following:

- High Concentration of Methane Gas (10% LEL, or 0.5% in air by volume) Initiates HIGH FACILITY GAS CONCENTRATION alarm in the control room. This alarm will also activate the facility ventilation system to its "High Evacuation Setting".
- High-High Concentration of Methane Gas (25% LEL, 1.25% in air by volume) Indicates HIGH-HIGH FACILITY GAS CONCENTRATION alarm in the control room and Illuminates an ALARM CONDITION on the methane detection control panel. The LFGTE Facility will automatically shut down and the affected area should be ventilated using confined space blowers and/or the facility exhaust/supply fans. After sufficient time has been allowed for ventilation, facility personnel will confirm ambient air concentrations from the gas control panel. When safe limits are satisfied, operators may enter the affected building with a portable gas detector and attempt to find and repair the leak.

1.4.4 Lightning Protection and Grounding System

The LFGTE facility will have a lightning protection and grounding system installed in accordance with UL 96 and NFPA 780.

1.4.5 Facility Monitoring

As described above, a number of conditions during facility operation could trigger alarm conditions. Alarm conditions will be monitored by the LFGTE control system and will notify facility operators via text alerts, email alerts, and voice messages through the communication system. Although the facility is not staffed 24/7, operators are on call 24 hours a day, seven days a week to respond to upset conditions at the LFGTE Facility.

In addition to notifying the on-call operator of an upset condition, the central control system can be programmed to shutdown all or a portion of the LFGTE Facility. An upset condition might result in the termination of electrical energy flow to the utility grid, shutdown of one or more engine-generator sets, and/or shutdown of incoming gas compressors/blowers.

1.4.6 Facility Security

The LFGTE Facility is surrounded by security fence and is locked during times when the LFGTE operators are not present. The facility access doors are steel insulated and are locking deadbolts. Steel overhead doors also provide access to the electric room, engine room and storage/shop room areas. The overhead doors are controlled from inside the LFGTE Facility.



1.4.7 Emergency Response

Site emergencies are handled in accordance with the J.E.D. Landfill Facility Emergency Contingency plan contained within the most current Operation Plan . This plan covers the following:

- fire response;
- medical emergencies response;
- spill/release/emission response;
- natural disasters; and
- hazardous or other unauthorized materials.

A list of emergency telephone numbers will be posted in the LFGTE Facility:

- | | |
|--|----------------|
| ■ Ambulance Service | 911 |
| ■ Police Department | 911 |
| ■ Fire Department | 911 |
| ■ J.E.D. Landfill Administration Building | (407) 891-3720 |
| ■ Florida Department of Environmental Protection | (407) 897-4100 |

1.5 Waste / By-product Management

The following sections discuss the LFGTE facility's plan to properly manage various wastes and by-products.

1.5.1 Condensate Management

Condensate will be generated within the LFGTE Facility during the chilling of the landfill gas to approximately 40°F. The condensate will be collected and directed to a below grade double-wall HDPE tank and then pumped to Omni's condensate management system located near the leachate holding facility. The condensate will be tested as necessary to properly characterize the waste stream in accordance with Federal and State hazardous waste rules. Non-hazardous liquids will be pumped into the existing leachate management system for ultimate disposal. If determined to be hazardous, offsite disposal will be arranged at a properly licensed and permitted hazardous waste treatment/disposal facility. Based upon experience at similar facilities, the expected condensate amount for the initial 6 engines will be approximately 2,500 gallons per day. Once the facility reaches the full 12 engine build out, the estimated condensate amount is expected to double or approximately 5,000 gallons per day.

1.5.2 Waste Handling

The LFGTE Facility expects to generate various waste materials in typically small amounts. All non-hazardous waste will be disposed of at the J.E.D. Facility in coordination with Omni and as authorized permits for the J.E.D. Facility. Should any wastes be considered hazardous, they will be treated/disposed at a licensed and permitted hazardous waste facility.



1.5.2.1 Waste Oil

Waste oil will be generated as part of normal operations at the LFGTE Facility. Based upon information from the engine supplier, each engine during a routine oil change will generate approximately 150 gallons of waste oil. The estimated frequency of oil changes is on the order of once for every 750 to 1,000 hours of operation. Thus, with the initial 6 engines looking at a worst case scenario, the anticipated amount of waste oil is estimated to be approximately 900 gallons per month. The LFGTE Facility anticipates having a 1,000 gallon double-wall tank for waste oil which will be serviced by a licensed waste oil contractor at least monthly. The waste oil will then be disposed of or recycled at a licensed waste oil facility.

1.5.2.2 Hydrogen Sulfide Treatment Waste

Waste materials will be produced during H₂S treatment of the landfill gas. Either a solid scavenger media type or liquid waste will be produced depending on the type of treatment technology selected (non-regenerative or regenerative). These types of wastes are typically non-hazardous and may vary in quantity. Testing will be performed to determine if the wastes are characteristically non-hazardous or hazardous and managed accordingly. Non-hazardous wastes may be disposed at the Omni facility depending on quantities and types of wastes produced. Disposal may also occur at off-site licensed waste handling facility.

1.6 Landfill Gas Conveyance

Landfill gas will be conveyed from the waste disposal area to the LFGTE Facility via a vacuum piping system. As previously noted, Omni will construct a temporary header system installed along an existing partially constructed landfill perimeter berm to convey the landfill gas to the LFGTE Facility as shown on Drawing Sheets 3A and 3B. This temporary landfill gas header system will connect the LFGTE Facility to the waste disposal area's GCCS until future development of disposal area allows for the direct tie-in of the GCCS to the LFGTE Facility. Once the waste disposal area has been developed sufficiently to allow for a direct connection in Cell 23 from the GCCS to the LFGTE Facility, a short supply pipe will be installed. After this occurs, the perimeter header may be left in place as an alternative conveyance pathway for landfill gas and troubleshooting.

Piping will consist of both high density polyethylene (HDPE) for below grade installation and carbon steel piping for above grade installation (as necessary for thermal expansion). Other details of the permitted GCCS system design are provided in documents provided at the J.E.D. Facility.

1.6.1 Blower and Flare Operation

Omni plans to maintain a 100% capacity of flares for thermal destruction of landfill gas independent of the LFGTE Facility. All flares will be located in the landfill gas management area (which also houses the LFGTE Facility) as shown on in the Drawing Set for the permit application. The total number and type of flares has not yet been determined, but the total capacity will enable all landfill gas conveyed by the



GCCS to the landfill gas management area to be destroyed via flares while the LFGTE Facility is completely shutdown, as required by the facility's Title V Permit.

Omni will conduct routine operation and maintenance on the flares to ensure that proper operation can be achieved when 100% of the available landfill gas is being consumed by the LFGTE Facility (i.e. no landfill gas flow to the flares). Omni will conduct full start-up sequencing of each installed (and operational) flare at least once every 6 months to determine and ensure proper operation. During periods of time when both flare and the LFGTE Facility are operating jointly, Omni will ensure that all installed (and operational) flares are operated such that operational time is shared between each flare. An automatic by-pass valve will be installed to direct excess landfill gas not being consumed by the LFGTE Facility to the flare for thermal destruction.

1.7 LFGTE Facility Closure

The contract between Omni and CB&I is for a 20 plus year period commencing after the beginning of energy generation. Operation of the LFGTE Facility beyond that period is likely but unknown at this time. Since Omni will maintain a 100% flaring capacity of landfill gas independent of the LFGTE Facility and the LFGTE Facility is not required by rule or regulation, no closure and long term care costs are included in this plan. Should the LFGTE Facility cease to operate at the end of the 20 year contract period, landfill gas will be controlled via thermal destruction in the facility's flare(s). No formal closure construction (e.g. such as Class I landfill closure construction) to stabilize the facility is required once the LFGTE Facility ceases operation.

JED SOLID WASTE MANAGEMENT RENEWABLE LANDFILL GAS TO ENERGY FACILITY CB&I ENVIRONMENTAL & INFRASTRUCTURE ST. CLOUD, FLORIDA 2014

STATE MAP



LOCATION MAP



VICINITY MAP



HRGreen

COURT INTERNATIONAL BUILDING 2550 UNIVERSITY AVE. W., SUITE 400N | ST. PAUL, MINNESOTA 55114
Phone: 651.644.4383 | Toll Free: 800.728.7805 | Fax: 651.644.9446 | HRGreen.com

G000

NO.	DATE	REV.	DESCRIPTION

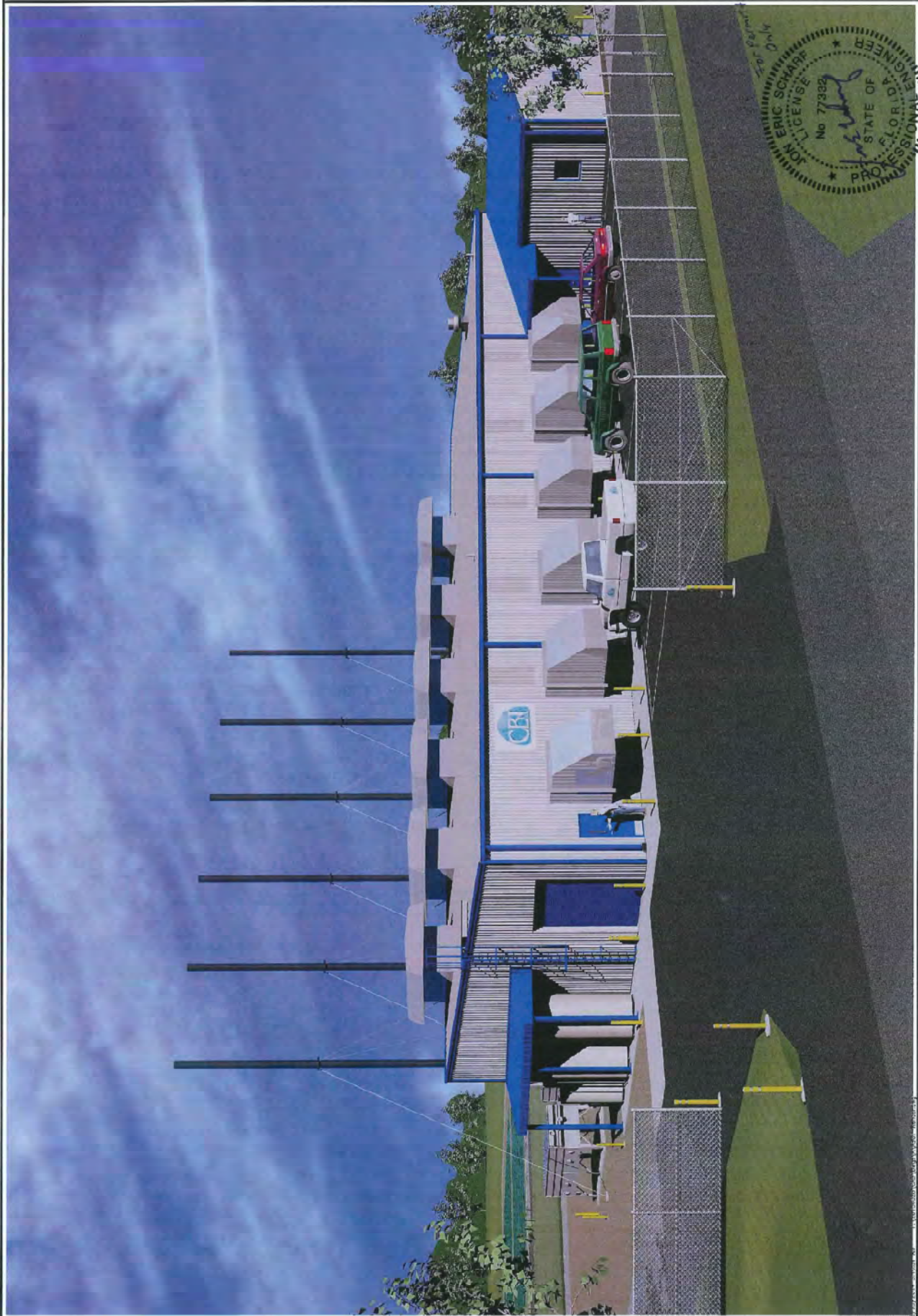


JED SWMF RENEWABLE LANDFILL GAS TO ENERGY FACILITY
CB&I ENVIRONMENTAL AND INFRASTRUCTURE
ST. CLOUD, FLORIDA
GENERAL
COVER SHEET

DATE OF THIS COVER SHEET: 11/1/2014
DATE OF LAST REVISION: 11/1/2014
PROJECT NO.: 2013-0023
SHEET NO.: 001
SHEET TOTAL: 002/002

G000





A901

DATE: 08/14/2014
 PROJECT: SWMF RENEWABLE LANDFILL GAS TO ENERGY FACILITY
 DRAWING NO.: A901

DESIGNED BY: J. SCHAPP
 CHECKED BY: J. SCHAPP
 DATE: 08/14/2014

ARCHITECTURAL
 JED SWMF RENEWABLE LANDFILL GAS TO ENERGY FACILITY
 ST. CLOUD, FLORIDA



NO. DATE BY
 REVISION DESCRIPTION

FIRE ALARM CONTROL MATRIX

- [illegible]



APPENDIX G

**WASTE TIRE STORAGE AND PROCESSING
PLAN**

OPERATION PLAN

APPENDIX G

WASTE TIRE STORAGE AND PROCESSING PLAN



WASTE TIRE STORAGE AND PROCESSING PLAN

J.E.D. SOLID WASTE MANAGEMENT FACILITY

**OMNI WASTE OF OSCEOLA COUNTY, LLC
1501 OMNI WAY
ST. CLOUD, FL**

Prepared by:



15450 New Barn Road - Suite 304
Miami Lakes, FL 33014
Phone: (305) 728-7430

~~December 16, 2009~~
18 February 2010

TABLE OF CONTENTS

1. Overview
2. Waste Tire Receipt
3. Maximum Waste Tire Storage Volumes
4. Maximum Tire Processing Equipment
5. Tire Storage
 - 5.1 Whole Waste Tires
 - 5.2 Processed Waste Tires
 - 5.3 Waste Tire Storage Requirements and Prohibitions
6. Fire Prevention
7. Vector Control
8. Transportation of Waste and Processed Tire
9. Record Keeping and Reporting
10. Closure

Sheet 1. Waste Tire Storage and Processing Area

Exhibit A: Calculation of Maximum Whole and Processed Tire Storage Volumes

Exhibit B: Tire Processing Equipment Information

1. OVERVIEW

Waste tires will be accepted, stored and processed at the J.E.D. Solid Waste Management Facility (Facility) as authorized under Chapter 62-711, Waste Tire Rule, Florida Administrative Code (FAC). Processed tires will be disposed of or used as initial cover at the Facility as authorized under Rule 62-711.400(3), FAC. Rule 62-711.400(3) allows waste tires that have been cut into sufficiently small parts to be disposed of, or used as initial cover, at a permitted Class I landfill. For use as initial cover, a sufficiently small part means 70 percent of the waste tire material is cut into pieces of 4 square inches or less and 100 percent of the waste tire material is 32 square inches or less. For purposes of disposal, a sufficiently small part means that the tire has been cut into at least eight substantially equal pieces. Based on market conditions, the processed tires may also be transported to other authorized end users for other recycling uses or disposal at other permitted solid waste management facilities.

2. WASTE TIRE RECEIPT

Transporters of waste tires to the Facility will follow the typical site entrance procedures for processing of landfill customers. Upon completion of processing at the weigh scale, customers will be directed to the Waste Tire Storage and Processing (WTSP) Area and directed to offload at the designated storage location by a Facility spotter. Weigh scale attendants will notify Facility personnel that a waste tire customer is in route to the WTSP Area. The location of the WTSP Area is shown on the attached Sheet 1.

3. MAXIMUM WASTE TIRE STORAGE VOLUMES

In accordance with Rule 62-711.530(2), FAC, the maximum storage limits that will be set in a waste tire processing facility permit are:

- (a) For the aggregate of whole waste tires, processed waste tires, and residuals, 60 times the daily through-put of the processing equipment being used; however, whole waste tires shall not exceed 30 times the daily through-put of the processing equipment being used; and
- (b) For used tires, 10,000 used tires stored separately from other waste tires.

A summary of the maximum storage volumes and weights of whole waste tires, processed tires and residuals for the Facility is provided below. The maximum volumes and weights shown do not exceed the permitted volumes as allowed by the above Rule limits. Supporting calculations for the volumes shown are provided in Exhibit A.

Summary of Maximum Storage Volumes and Weights

One Storage Pile – Maximum Dimensions 50’W X 100’L X 10’H

Whole Waste Tires	27,800 tires	1,851 cy	313 tons
-------------------	--------------	----------	----------

One Storage Pile – Maximum Dimensions 50’W X 100’L X 10’H

Processed Tires	N/A	1,043 cy	313 tons
-----------------	-----	----------	----------

One 40-cy Roll-off Container

Residuals	N/A	40 cy	10 tons
-----------	-----	-------	---------

Note: The maximum daily throughput is limited to 313 tons based on the storage area limits. The planned daily throughput is approximately 30 tons and the annual 9,300 tons.

4. WASTE TIRE PROCESSING EQUIPMENT

The waste tire processing equipment used at the Facility will be a portable Saturn Model 72-44BGHT-300HP Shredder or similar equipment. The equipment will be stationed at the WTSP Area for use at the Facility or mobilized from other WSI owned facilities for use as needed. Information for the processing equipment is provided in Exhibit B.

5. TIRE STORAGE

5.1 Whole Waste Tires

Whole waste tires received at the Facility will be stored on the ground in a pile within the WTSP Area as shown on Sheet 1 (attached). Whole tires will be stacked/piled within an area 50 ft wide by 100 ft long and no higher than 10 ft. Tires will be processed when the pile reaches the maximum storage volume or sooner. Processed tires and any residuals will be stored as described in the following section.

5.2 Processed Waste Tires

Whole waste tires will be processed within the WTSP Area in the general location shown on Sheet 1. The processing equipment is equipped with conveyors that will allow the processed tires to be loaded directly into Facility haul trucks and transferred to the active disposal area for use as initial/daily cover or direct disposal. If desired, processed tires may also be temporarily stockpiled at the WTSP Area. If processed tires are stockpiled within the WTSP Area, they will be stockpiled in an area 50 ft wide by approximately 100 ft long, and no higher than 10 ft. Stockpiled processed tires will be removed from the area within 72 hours. Any residuals

produced during processing will be stored in one 40 cy roll-off box located at the WTSP Area. The residuals will be transferred to the disposal area when the roll-off container is filled. Based on the maximum storage volumes and shredder equipment process rates, it is estimated mobilization of the equipment, processing, cleanup and demobilization can be completed in approximately two days. Existing Facility heavy equipment will be used to handle whole tires, processed tires and residual materials.

5.3 Waste Tire Storage Requirements and Prohibitions

To satisfy the outdoor storage requirements of Rule 62-711.540, FAC, whole waste tires and processed tires stored in the WTSP Area will meet the following:

Rule 62-711.540(1)(a)

A sign will be maintained at the Facility entrance stating operating hours, cost of disposal and Facility rules.

Rule 62-711.540(1)(b)

No operations involving the use of open flames will be conducted within 25 feet of a waste tire pile.

Rule 62-711.540(1)(c)

An attendant will be present when the Facility is open for business.

Rule 62-711.540(1)(d)

Fire protection services for the Facility are assured through notification to the local fire protection authorities. A fire safety survey will be conducted at least annually and the survey report will be included with the next quarterly report submitted to the FDEP.

Rule 62-711.540(1)(e)

Emergency preparedness procedures are included in the Facility's Operation Plan kept on file at the Facility. An additional copy of the Operation Plan is kept at WSI's Orlando area hauling company located in Altamonte Springs, Florida. Additional fire prevention procedures are described in Section 6 of this Waste Tire Storage and Processing Plan. The emergency preparedness procedures will be reviewed at least annually and updated as necessary. The following information is included in Section 5 and 6 of the Operation Plan:

1. A list of names and numbers of persons to be contacted in the event of a fire, flood, or other emergency

2. A list of emergency response equipment at the site, it's location, and how it should be used in the event of a fire or other emergency; and
3. A description of the procedures that will be followed in the event of a fire, including procedures to contain and dispose of the oily material generated by the combustion of large numbers of waste tires. These procedures include blocking the storm water discharge pipe at the WTSP Area and using oil absorbent materials as needed to assist in containing oily materials.

Rule 62-711.540(1)(f)

Facility personnel will immediately notify the FDEP in the event of a fire or other emergency which poses an unanticipated threat to the public health or the environment and will submit a written report of the emergency to the FDEP within two weeks of the emergency. The report will describe the origins of the emergency, the actions taken to deal with the emergency, results of the actions that were taken, and an analysis of the success or failure of the actions.

Rule 62-711.540(1)(g)

Records of the quantity of tires received, stored, processed and shipped will be maintained at the Facility as described in Section 9 of this Plan.

Rule 62-711.540(1)(h)

Omni Waste of Osceola County, LLC is the owner of the property.

Rule 62-711.540(1)(i)

Communication equipment is maintained at the Facility to assure the local fire protection authorities can be notified in case of a fire.

Rule 62-711.540(1)(j)

Mosquito and rodent control methods are described in Section 7 of this Plan.

Rule 62-711.540(1)(k)

The WTSP Area is located adjacent to the paved access road leading to the active disposal area. The road will be kept passable for any motor vehicle at all times.

Rule 62-711.540(3)(a)

The location of the WTSP Area is within the future disposal footprint boundary as shown on Sheet 1 (attached). This location is not within 200 feet of any natural or artificial body of water, including wetlands within the jurisdiction of the Department.

Rule 62-711.540(3)(b)

The outdoor waste tire, processed tire and residual storage will not exceed 50 ft in width, 10,000 sq ft in area, or 10 ft in height.

Rule 62-711.540(3)(c)

A minimum 50 ft wide fire lane will be maintained around each outdoor waste tire pile. Access to the fire lane for emergency vehicles will be maintained at all times.

Rule 62-711.540(3)(d)

Access to the Facility is controlled through use of fences, gates and natural barriers.

Rule 62-711.540(3)(e)

The WTSP Area is located within the future disposal area as shown on Sheet 1. A storm water detention berm has been constructed around the entire future disposal footprint as required of the Facility's Environmental Resource Permit issued by the FDEP. This berm is designed to contain all storm water discharged from the active disposal operations, including the WTSP Area. In addition to this berm, a smaller storm water berm will be constructed around the WTSP Area to assist in containment of oily material runoff from a potential waste tire fire from entering water bodies. In event of a fire, Omni employees will be directed to block stormwater discharge points at the WTSP Area and use oil absorbent materials as necessary to contain oily materials. Any required cleanup activities will be conducted in accordance with Section 5.4 of the Operation Plan.

Rule 62-711.540(3)(f)

The WTSP Area will be kept free of grass, underbrush, and other potentially flammable vegetation at all times.

Rule 62-711.540(4)

Processed tires stockpiled at the WTSP Area will be removed within 72 hours after processing. This will greatly reduce or eliminate the possibility of processed tire piles from exceeding 300 degrees Fahrenheit.

Rule 62-711.540(5)

Any residuals produced during tire processing will be loaded in a roll-off container and disposed at the active disposal area as needed.

To satisfy the prohibitions contained in Rule 62-701.300, FAC, the WTSP Area will meet the following:

The construction/operation of the WTSP Area will not violate the following prohibitions of Rule 62-701.300 of the Florida Administrative Code (F.A.C):

- General Prohibition: No waste tires will be stored, processed or disposed of at the Facility:
 - except as authorized by a permit from FDEP [Rule 62-701.300(1)(a)], and
 - in a manner that would cause violation of air quality standards or water quality standards [Rule 62-701.300(1)(b)]; and
- Siting: As noted in the 5-Year Permit Renewal Application submitted in September 2006 and the Vertical Expansion Application submitted in September 2007, the below siting prohibitions were met with regards to the solid waste transfer and recycling activities performed at the Facility. Therefore, the siting prohibitions for storage and processing of waste tires is also met. Specifically, there are no potable water wells within 500 feet of the Facility and no natural or artificial body of water within 200 feet of the Facility. No waste tires will be stored or disposed of:
 - in an area where geological formations or other subsurface features will not provide adequate support [Rule 62-701.300(2)(a)],
 - within 500 feet of any existing or approved potable water well [Rule 62-701.300(2)(b)],
 - in a dewatered pit [Rule 62-701.300(2)(c)],
 - in an area subject to frequent and periodic flooding [Rule 62-701.300(2)(d)],
 - in a natural or artificial body of water [Rule 62-701.300(2)(e)],
 - within 200 feet of a any natural or artificial body of water [Rule 62-701.300(2)(f)],
 - on the right of way of any public highway, road, or alley [Rule 62-701.300(2)(g)], and
 - within 1000 feet of an existing or approved potable water well serving a community water supply as defined in subsection 62-550.200(12), FAC [Rule 62-701.300(2)(h)].

Other prohibitions, as stated in Rules 62-701.300(3) through (6) and (8) through (11), FAC are not applicable to waste tire processing facility.

6. FIRE PREVENTION

The following fire prevention measures will be implemented for the tire storage and processing operations:

- At a minimum, the following items will be maintained at the waste tire storage area:
 - (1) One 2A:10BC fire extinguisher
 - (2) One 2.5 gal (10 L) water extinguisher
 - (3) One 10 ft (3 m) long pike pole
 - (4) One rigid rake
 - (5) One round point shovel
 - (6) One square point shovel
- One dry chemical fire extinguisher with a minimum rating of 4A:40BC will be carried on each piece of fuel powered equipment used at the waste tire storage area;
- Whole and processed tires will be stored in separated stockpiles which will greatly improve the ability to fight fires and reduce fire propagation;
- Adequate communication equipment will be maintained at the Facility to assure the local fire protection authorities can be notified in case of a fire;
- A 50 foot fire access lane will be maintained around each whole tire and processed tire stockpile for emergency access;
- Smoking will be prohibited within the waste tire storage area;
- No operations involving the use of open flames, cutting and welding, or heating devices will be conducted within the waste tire storage area;
- As necessary, safeguards will be provided for equipment and vehicles used in the waste tire storage area to minimize the hazard of possible sparks;
- The WTSP Area will be kept free of grass, underbrush, and other potentially flammable vegetation at all times;
- Facility heavy equipment, including dozers, loaders, excavators, backhoes and water wagons will be available to assist Facility and fire department personnel in fighting possible fires;
- The road to the WTSP Area will be kept passable for any motor vehicle at all times;
- Processed tires stockpiled at the WTSP Area will be removed within 72 hours after processing. This will greatly reduce or eliminate the possibility of processed tire piles from exceeding 300 degrees Fahrenheit;
- A fire safety survey will be conducted at least annually and the survey report will be included with the next quarterly report submitted to the FDEP;
- All fire fighting equipment stored at the WTSP Area will be inspected weekly. Fire extinguishers will be serviced at least annually, or as needed;
- Annual training will be provided to site employees in the use of fire fighting equipment.

7. VECTOR CONTROL

Facility personnel will monitor the WTSP Area on a daily basis for the presence of rodents and other vectors (including collected water for mosquito development). Traps and insecticide applications will be performed by a 3rd party pest control company if deemed necessary.

8. TRANSPORTATION OF WASTE AND PROCESSED TIRES

Rule 62-711.520, FAC requires any waste tire collector engaged in collecting or transporting waste tires for the purpose of storage, sale, recycling, reuse, disposal or processing to be properly registered with the Florida Department of Environmental Protection (FDEP). Additionally, Rule 62-711.400(5), FAC requires anyone that contracts the services of a waste tire collector for the transportation, disposal, or processing of waste tires to ensure the collector is registered with the FDEP or exempt from registration requirements. Omni will maintain records of waste tire collectors and volumes as described below.

9. RECORD KEEPING AND REPORTING

In accordance with Rule 62-711.530(4), FAC, information regarding waste tire acceptance, storage and processing will be recorded and maintained for three years. Records will be made available at the site for inspection by the FDEP during normal business hours. The records will include the following:

- a). For all waste tires shipped from the WTSP Area, the name and waste tire collection registration number of the waste tire collector who accepted the waste tires for transport, and the quantity of waste tires shipped with that collector; and if the waste tires were shipped with a person who is not a waste tire collector, the number of tires shipped, the person's name, address and telephone number; and the place where the waste tires were deposited;
- b) For all waste tires received at the WTSP Area, the name and waste tire collector registration number of the collector who delivered the waste tires to the WTSP Area, and the quantity of waste tires received from that collector, and if more than five waste tires were delivered by a person who is not a waste tire collector, the number of tires delivered and the person's name, address and telephone number; and
- c) For all waste tires removed for recapping, the quantity and type removed, and the name and location of the recapping facility receiving the tires.

In accordance with Rule 62-711.530(5), FAC, quarterly reports shall be submitted to the FDEP that summarizes the information above. The reports will be submitted by the 20th of the month following the close of each calendar quarter. The reports will be submitted on DEP Form # 62-701.900(21) and will also include the information listed below:

- a) The facility name, address and permit number;
- b) The quarter covered by the report;
- c) The total quantity, by category, of waste tires received at the facility during the quarter covered by the report;

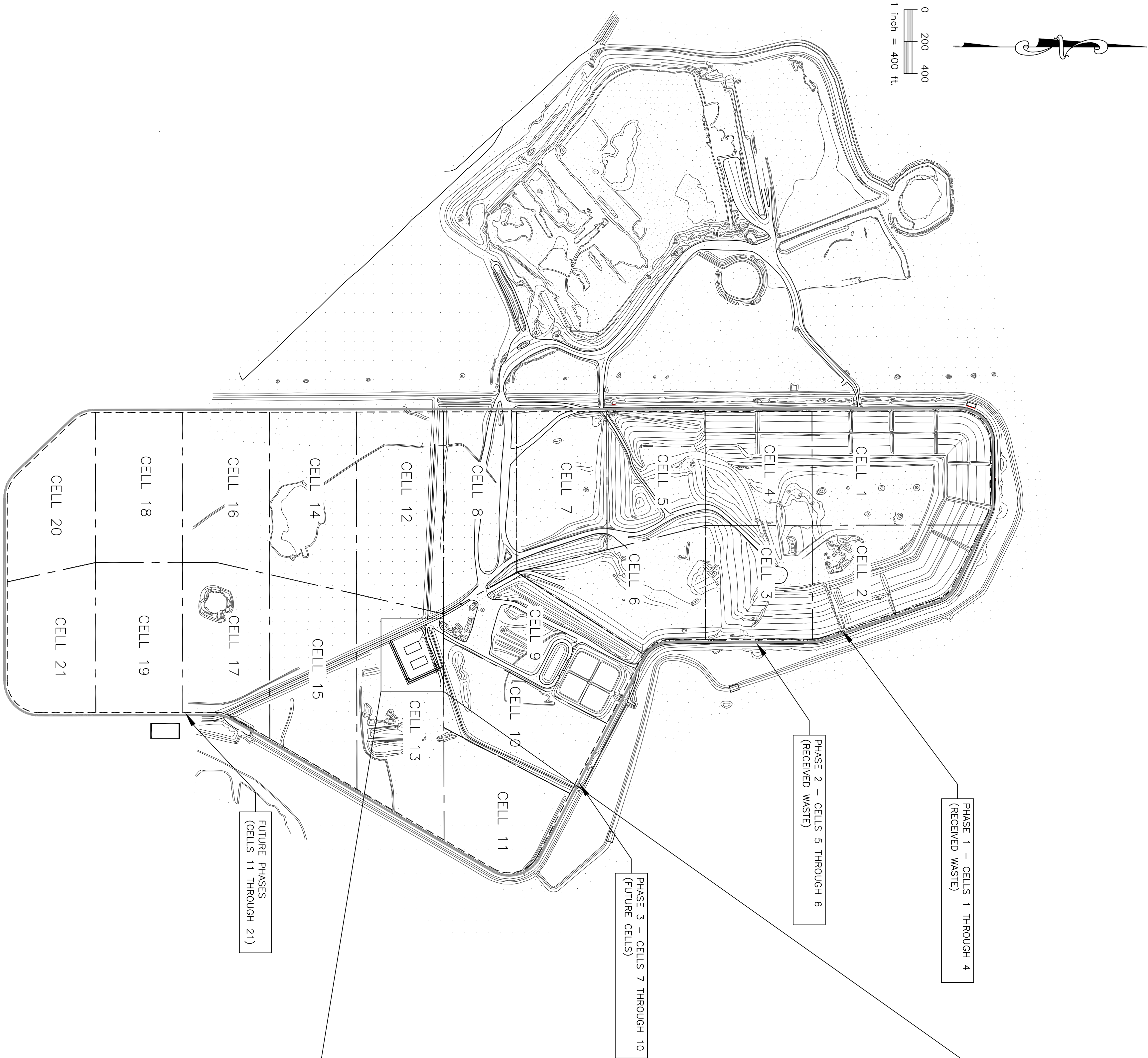
- d) The total quantity, by category, of waste tires shipped from the facility during the quarter covered by the report;
- e) The total quantity of waste tires processed during the quarter;
- f) The total quantity, by category, of waste tires located at the facility on the last day of the quarter; and
- g) A list of all dates on which one or more category of waste tires exceeded the storage limit, which category was in excess, and how this condition was relieved or will be relieved.

10. CLOSURE

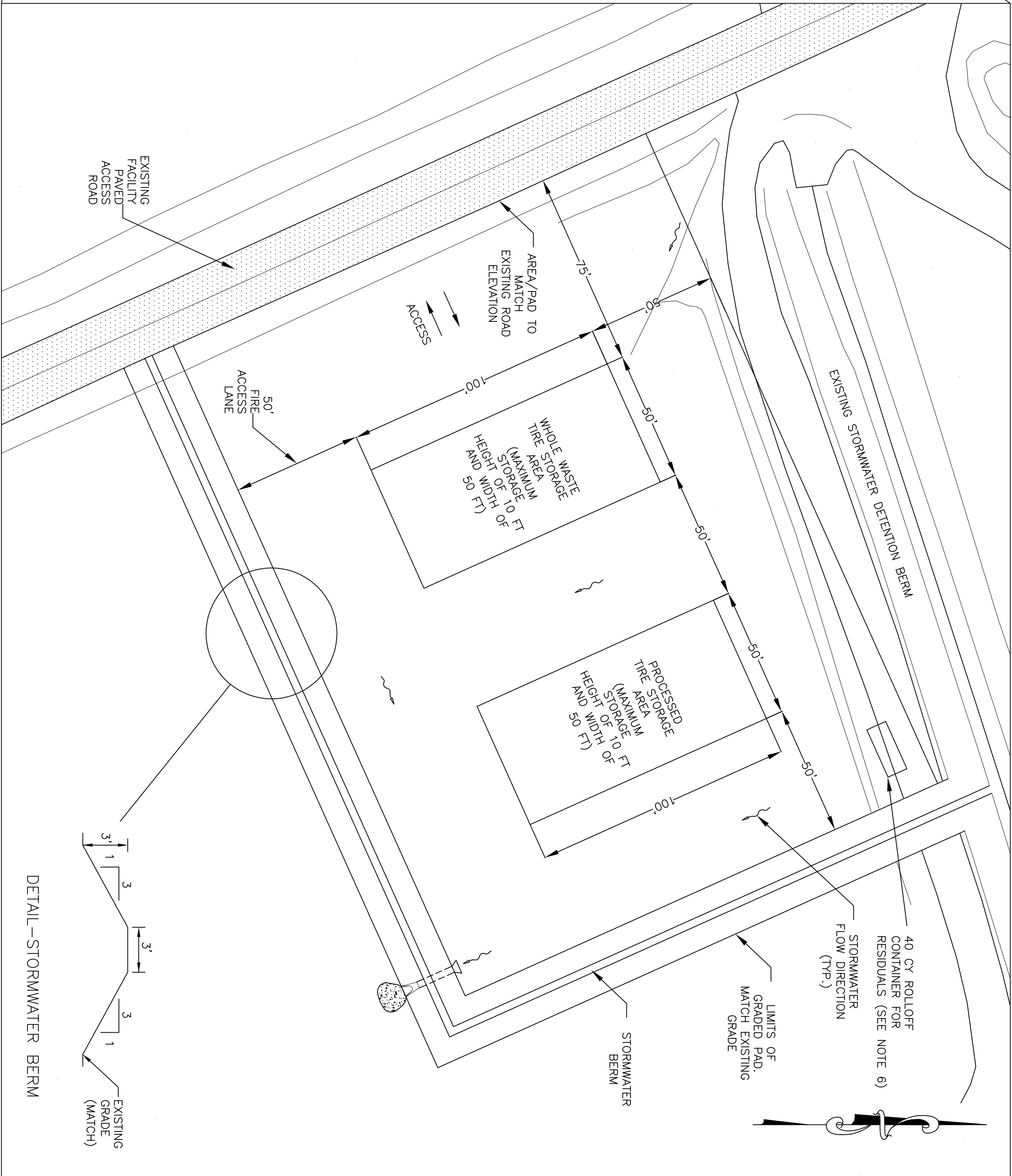
Closure of the WTSP Area will be performed together with closure of the landfill or prior to that time if waste tire storage and processing operations are no longer performed at the Facility. In closing the WTSP Area, the following activities will be performed:

- Notice will be posted at the Facility weigh scales 30 days prior to closing indicating that the WTSP Area will be closing and the date of closure. Drivers of vehicles with tire loads will be provided a flyer that includes the phone number of the Osceola County Solid Waste Office. Notice of the closing will also be provided to the Florida Department of Environmental Protection (FDEP) and the Osceola County Solid Waste Office;
- Customers with tire loads will not be accepted at the site after the official closure date;
- Remaining processed tires and residuals will be removed from the WTSP Area and disposed directly at the active disposal area. Whole tires will be further processed and disposed directly at the active disposal area or removed from the Facility by an authorized transporter and disposed or recycled at an offsite location; and
- The area will be regraded to the natural grade and revegetated.

EXISTING TOPOGRAPHIC PLAN



WASTE TIRE STORAGE AND PROCESSING AREA



- *NOTES:
1. THE WASTE TIRE STORAGE AND PROCESSING AREA WILL BE LOCATED IN THE AREA OF CELL 13 OF FUTURE PHASES, AS SHOWN.
 2. THE AREA WILL BE GRADED TO DIRECT STORM WATER AWAY FROM THE WASTE TIRE COLLECTION AND PROCESSING AREA TO THE SOUTHEAST CORNER.
 3. AREA WILL BE CONSTRUCTED WITH ROAD BASE MATERIAL AND MAINTAINED FOR VEHICLE ACCESS.
 4. 50 FT. MINIMUM SPACING WILL BE PROVIDED AROUND AND BETWEEN ALL STOCKPILES FOR EMERGENCY ACCESS.
 5. MOBILE TIRE PROCESSING (SHREDDING) EQUIPMENT WILL BE STATIONED NEAR THE SHOWN STOCKPILE LIMITS DURING PROCESSING.
 6. 40-CY ROLLOFF CONTAINER FOR RESIDUALS WILL BE STAGED AS SHOWN. CONTAINER WILL BE REMOVED WHEN PROCESSING IS COMPLETE.
 7. TOPOGRAPHIC INFORMATION OBTAINED FROM DRAWING PREPARED BY BASE MAPPING DATED JULY 25, 2009.



HDR
HDR ENGINEERING, INC.
10000 AVENUE
SUITE 412
FT. LAUDERDALE, FLORIDA 33309

2	17 MAR 2010	RAI #2
1	16 FEB 2010	RAI #1
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	BRENDA ANN SMITH CLARK, P.E.
P.E. NO.	42754
PROJECT NUMBER	116377

OMNI WASTE OF OSCEOLA COUNTY, LLC.
MINOR MODIFICATION APPLICATION
J.E.D. SOLID WASTE MANAGEMENT FACILITY
ST. CLOUD, FLORIDA

SITE PLAN FOR
WASTE TIRE STORAGE
AND PROCESSING OPERATIONS

FILENAME: 000-02.DWG
SCALE: SHEET: 3

EXHIBIT A

CALCULATION OF MAXIMUM WHOLE AND PROCESSED TIRE STORAGE VOLUMES

In accordance with Rule 62-711.530(2), FAC, the maximum storage limits that will be set in a waste tire processing facility permit are:

- (a) For the aggregate of whole waste tires, processed waste tires, and residuals, 60 times the daily through-put of the processing equipment being used; however, whole waste tires shall not exceed 30 times the daily through-put of the processing equipment being used; and
- (b) For used tires, 10,000 used tires stored separately from other waste tires.

Waste tire processing equipment used at the WTSP Area will be a portable Saturn Model 72-44BGHT-300HP Shredder or similar equipment. Information for this shredder equipment is provided in Exhibit B. The shredder's reported single pass through-put capacity for tires is 20 tons per hour. Assuming the waste tire processing equipment is operated from 6:00 a.m. to 5:00 p.m. Monday through Friday and 6:00 a.m. to 2:00 p.m. on Saturday, approximately 220 tons of tires could be shredded in one week day and approximately 160 tons of tires could be shredded on Saturday, based on the reported through-put capacity of the equipment. Therefore, in accordance with the maximum storage limits above, no more than 13,200 tons of the aggregate of whole tires, processed tires, and residuals, or 6,600 tons of whole waste tires could be stored at the WTSP Area at any one time.

As reported by the Rubber Manufacturers Association (RMA), the average weight of a used heavy truck tire is 110 lbs and 22.5 lbs for a passenger car, representing a passenger tire to heavy truck tire equivalent (passenger tire equivalent [PTE]) of approximately 4.9 to 1 based on weight (see backup provided in this Exhibit A). Based on the processing equipment through-put capacities noted above, the maximum number of waste tires that could be stored at the WTSP Area is 120,000 heavy truck tires or 586,666 passenger tires. Omni will not collect or store used tires separately from waste tires. Therefore, the additional storage limit of 10,000 used tires as noted in Rule 62-711.530(2), FAC does not apply. Due to storage space and operational constraints at the Facility, Omni does not plan to store the maximum allowable number of waste tires as calculated above. The maximum number of tires Omni plans to store at the Facility is further described below.

Whole waste tires and processed tires will be stored on the ground in a pile within the WTSP Area as shown on Sheet 1 of the Waste Tire Storage and Processing Plan. The number of whole waste tires stored at the WTSP Area at any one time will depend on the type of tire (passenger or heavy truck). The maximum dimension of the whole waste tire storage area will be 50 ft wide by 100 ft long. The dimension of the process waste tire storage area will be 50 ft wide by 100 ft long.

Density information for stored waste and processed tires was obtained from the RMA and U.S. Environmental Protection Agency's Scrap Tire Cleanup Guidebook (USEPA Guidebook) (see

backup provided in this Exhibit A). As shown on pages 14 through 16 of the USEPA's Guidebook, approximately 100 passenger car tires can be loosely stacked, 150 tires if densely packed, in a 10 cy area. The RMA also reported approximately 100 passenger car tires can be loosely stored in a 10 cy area. However, RMA reported a densely packed number of 500 tires per 10 cy area. This likely represents like sized tires neatly stacked and tightly laced together. Based on WSI's experience in handling incidental waste tires at other solid waste facilities operated throughout Florida, the U.S. EPA's estimate for densely stacked tires is generally consistent with their handling experience. Therefore, the USEPA's density estimate was used. Based on the density information provided above, the number of whole waste passenger tires that could be stored in an area 50 ft wide by 100 ft long by 10 ft high ranges from 18,500 tires if loosely stacked and 27,800 tires if densely stacked. This represents an equivalent weight of 208 to 313 tons. A lesser number of tires, yet equivalent weight, would be stored if the waste tires consist of a mixture of passenger and heavy truck tires (see example calculation below).

Weight of 27,800 Whole Passenger Tires:

$$(22.5 \text{ lbs/passenger tire} \times 27,800 \text{ tires}) / 2,000 \text{ lbs/ton} = 313 \text{ tons}$$

Weight of 2,000 Heavy Truck Tires (9,800 PTE) and 18,045 Passenger Tires:

$$(110 \text{ lbs/ heavy truck tire} \times 2000 \text{ tires}) / 2,000 \text{ lbs/ton} + (22.5 \text{ lbs/passenger tire} \times 18,045 \text{ tires}) / 2,000 \text{ lbs/ton} = 110 \text{ tons} + 203 \text{ tons} = 313 \text{ tons}$$

Based on data reported by the USEPA and RMA, the density of loosely packed single pass shredded tires is approximately 600 lbs/cy. Assuming the maximum number of tires are processed and stored at the WTSP Area, the following volume would be required to store processed tires.

$$(313 \text{ tons} \times 2000 \text{ lbs/ton}) / 600 \text{ lbs/cy} = 1,043 \text{ cy}$$

Allowing for a maximum pile height of 10 ft based on Osceola County Department of Fire Rescue and Emergency Medical Services, an area approximately 50 ft wide by 100 ft long will be needed to store the processed tires. This area will allow for approximate 2H:1V sideslopes of the processed tire stockpile.

Any residuals produced during processing will be stored in one 40 cy roll-off box and transferred to the disposal area when the roll-off container is filled.

EXHIBIT B

TIRE PROCESSING EQUIPMENT INFORMATION



GRANUTECH-SATURN SYSTEMS CORPORATION
201 East Shady Grove Road
Grand Prairie, Texas 75050
PHONE: 972/790-7800
FAX: 972/790-8733
e-mail: sales@granutech.com

SATURN Model 72-44BGHT-300HP SHREDDER

Data Sheet

The Saturn shredder features twin counter-rotating shafts operating at slow speed and very high torque to reduce material by means of shearing and tearing. Slight shaft speed differential contributes to the cutting action while reducing particle sizing. The Saturn shredder is driven by a high displacement hydraulic motor, which in turn is powered by Saturn's proprietary open loop hydraulic drive system. Automatic overload detection initiates cutter shaft reversal to eliminate damage to the shredder components.

SPECIFICATIONS:

- | | |
|-------------------------------|-------------------|
| • Shredder Inlet Opening | 72" x 44" |
| • Shredder Outside Dimensions | 152" x 73" x 43" |
| • Power Unit Dimensions | 144" x 90" x 69" |
| • Shredder Weight | 28,000 pounds |
| • Power Unit Weight | 11,000 lbs. (dry) |

DETAILS:

Shredder

- | | |
|-------------------|--|
| • Cutter Shaft | Torque: Fast - 48,915 ft./lb.
Torque: Slow - 48,915 ft./lb. |
| • Cutter Speed | Fast Shaft - 24 RPM
Slow Shaft - 21.4 RPM |
| • Cutter Force | Fast: 52,176 lbs.
Slow: 52,176 lbs. |
| • Shaft Diameter | 8" hexagon (across flats) |
| • Cutter Diameter | 22.50" @ hooks |

Power Unit - Open Loop, Skid Mounted

- | | |
|--------------------|------------------|
| • Electrical Power | 300 HP (3 x 100) |
| • Hydraulic Flow | 238.5 GPM |
| • Rated Pressure | 3000 PSI |

GRANUTECH CORPORATION SYSTEMS

GRANUTECH-SATURN SYSTEMS CORPORATION
201 East Shady Grove Road
Grand Prairie, Texas 75050
PHONE: 972/790-7800
FAX: 972/790-8733
e-mail: sales@granutech.com

ELECTRICAL:

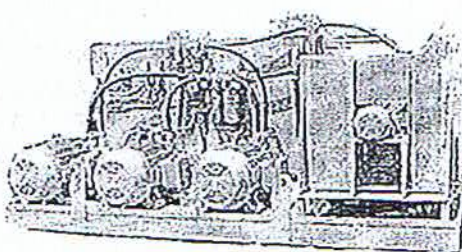
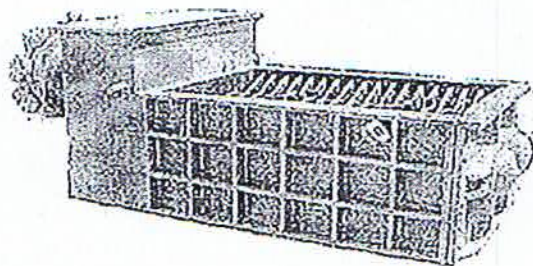
Operator initiated pushbutton controls, featuring Allen Bradley PLC. Motor controls include primary disconnect with short circuit protection, full load contactors, and electronic overload detection. Control power derived from a single-phase transformer. All components assembled and wired in a NEMA enclosure.

OPTIONAL:

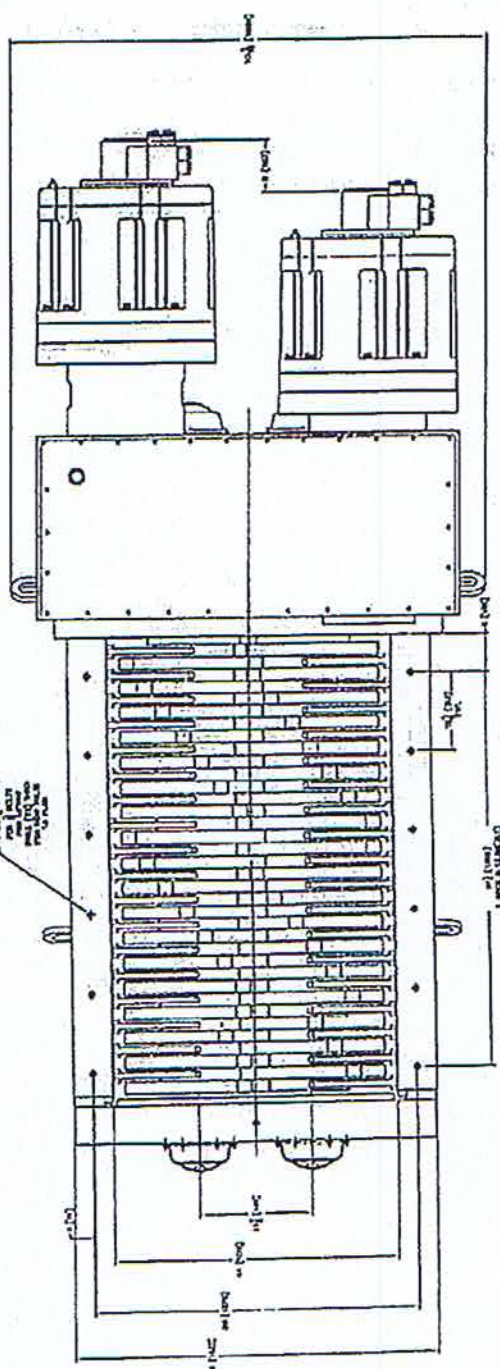
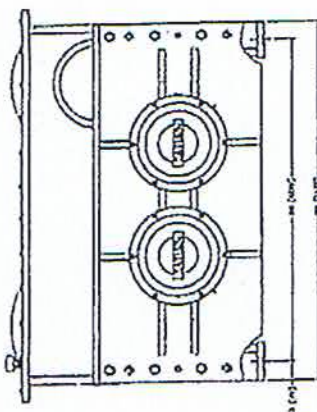
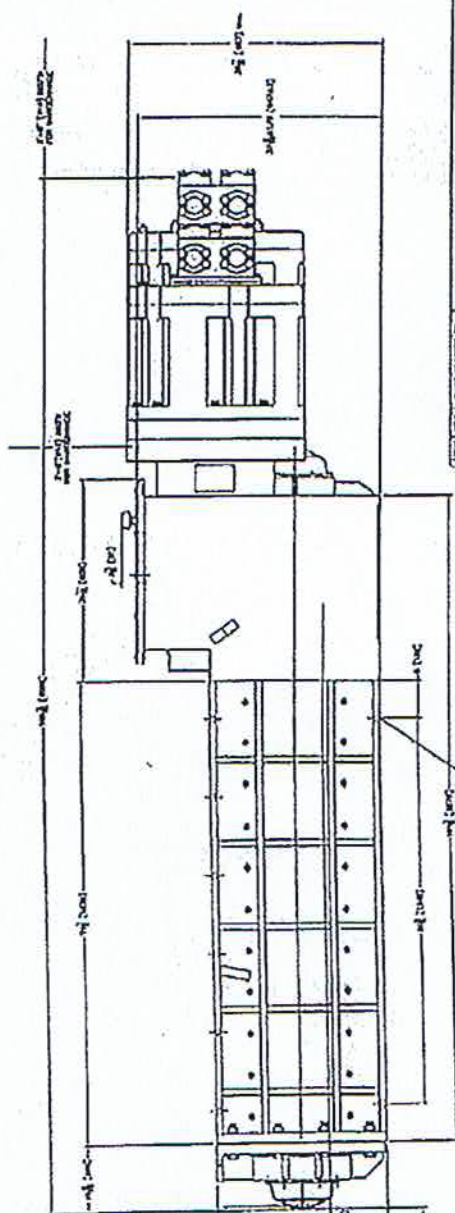
- Mounting and wiring of control and motor starter panels on hydraulic power unit
- Shredder infeed hopper
- Shredder support stand
- Infeed and discharge conveyors

APPLICATIONS:

- Tires – up to 20 T/HR
- MSW - up to 30 T/HR
- Non-Ferrous Metals – up to 12 T/HR
- Plastic – up to 12 T/HR



2017

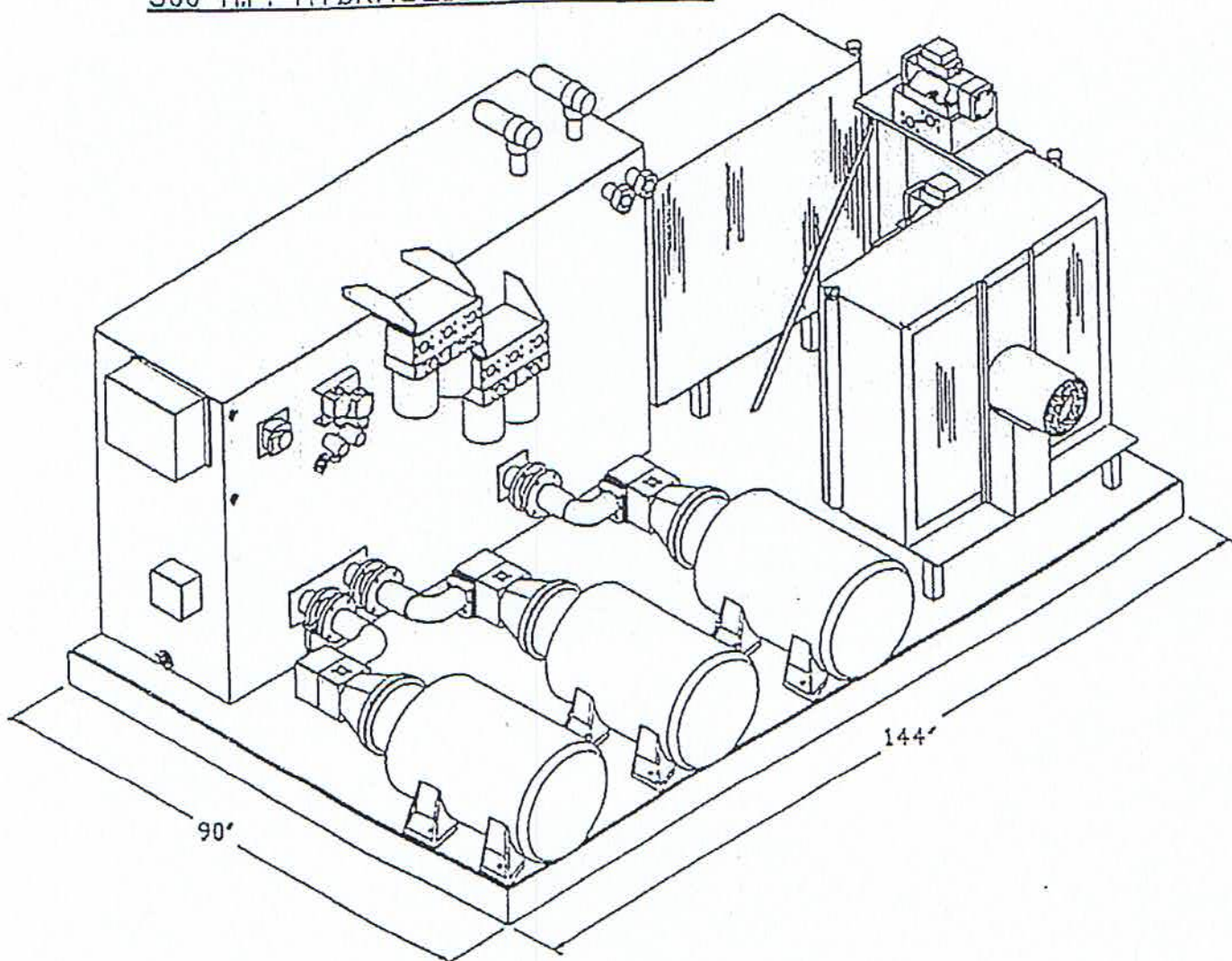
[illegible][illegible]

1944-1945	1946-1947	1948-1949	1950-1951	1952-1953	1954-1955	1956-1957	1958-1959	1960-1961	1962-1963	1964-1965	1966-1967	1968-1969	1970-1971	1972-1973	1974-1975	1976-1977	1978-1979	1980-1981	1982-1983	1984-1985	1986-1987	1988-1989	1990-1991	1992-1993	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015	2016-2017	2018-2019	2020-2021	2022-2023	2024-2025	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	2036-2037	2038-2039	2040-2041	2042-2043	2044-2045	2046-2047	2048-2049	2050-2051	2052-2053	2054-2055	2056-2057	2058-2059	2060-2061	2062-2063	2064-2065	2066-2067	2068-2069	2070-2071	2072-2073	2074-2075	2076-2077	2078-2079	2080-2081	2082-2083	2084-2085	2086-2087	2088-2089	2090-2091	2092-2093	2094-2095	2096-2097	2098-2099	2100-2101	2102-2103	2104-2105	2106-2107	2108-2109	2110-2111	2112-2113	2114-2115	2116-2117	2118-2119	2120-2121	2122-2123	2124-2125	2126-2127	2128-2129	2130-2131	2132-2133	2134-2135	2136-2137	2138-2139	2140-2141	2142-2143	2144-2145	2146-2147	2148-2149	2150-2151	2152-2153	2154-2155	2156-2157	2158-2159	2160-2161	2162-2163	2164-2165	2166-2167	2168-2169	2170-2171	2172-2173	2174-2175	2176-2177	2178-2179	2180-2181	2182-2183	2184-2185	2186-2187	2188-2189	2190-2191	2192-2193	2194-2195	2196-2197	2198-2199	2200-2201	2202-2203	2204-2205	2206-2207	2208-2209	2210-2211	2212-2213	2214-2215	2216-2217	2218-2219	2220-2221	2222-2223	2224-2225	2226-2227	2228-2229	2230-2231	2232-2233	2234-2235	2236-2237	2238-2239	2240-2241	2242-2243	2244-2245	2246-2247	2248-2249	2250-2251	2252-2253	2254-2255	2256-2257	2258-2259	2260-2261	2262-2263	2264-2265	2266-2267	2268-2269	2270-2271	2272-2273	2274-2275	2276-2277	2278-2279	2280-2281	2282-2283	2284-2285	2286-2287	2288-2289	2290-2291	2292-2293	2294-2295	2296-2297	2298-2299	2300-2301	2302-2303	2304-2305	2306-2307	2308-2309	2310-2311	2312-2313	2314-2315	2316-2317	2318-2319	2320-2321	2322-2323	2324-2325	2326-2327	2328-2329	2330-2331	2332-2333	2334-2335	2336-2337	2338-2339	2340-2341	2342-2343	2344-2345	2346-2347	2348-2349	2350-2351	2352-2353	2354-2355	2356-2357	2358-2359	2360-2361	2362-2363	2364-2365	2366-2367	2368-2369	2370-2371	2372-2373	2374-2375	2376-2377	2378-2379	2380-2381	2382-2383	2384-2385	2386-2387	2388-2389	2390-2391	2392-2393	2394-2395	2396-2397	2398-2399	2400-2401	2402-2403	2404-2405	2406-2407	2408-2409	2410-2411	2412-2413	2414-2415	2416-2417	2418-2419	2420-2421	2422-2423	2424-2425	2426-2427	2428-2429	2430-2431	2432-2433	2434-2435	2436-2437	2438-2439	2440-2441	2442-2443	2444-2445	2446-2447	2448-2449	2450-2451	2452-2453	2454-2455	2456-2457	2458-2459	2460-2461	2462-2463	2464-2465	2466-2467	2468-2469	2470-2471	2472-2473	2474-2475	2476-2477	2478-2479	2480-2481	2482-2483	2484-2485	2486-2487	2488-
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-------



Granutech-Saturn Systems Corporation
201 East Shady Grove Road ♦ Grand Prairie, Texas 75050
Phone: (972) 790-7800 ♦ Fax: (972) 790-8733
email: sales@granutech.com

300 H.P. HYDRAULIC POWER UNIT



THIS DRAWING IS THE PROPERTY OF GRANUTECH SATURN SYSTEMS. THIS DRAWING INCLUDES CONFIDENTIAL PROPRIETARY INFORMATION OF GRANUTECH SATURN SYSTEMS AND IS NOT INTENDED TO BE COPIED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF GRANUTECH SATURN SYSTEMS. ALL PATENT RIGHTS ARE RESERVED.

REVISIONS

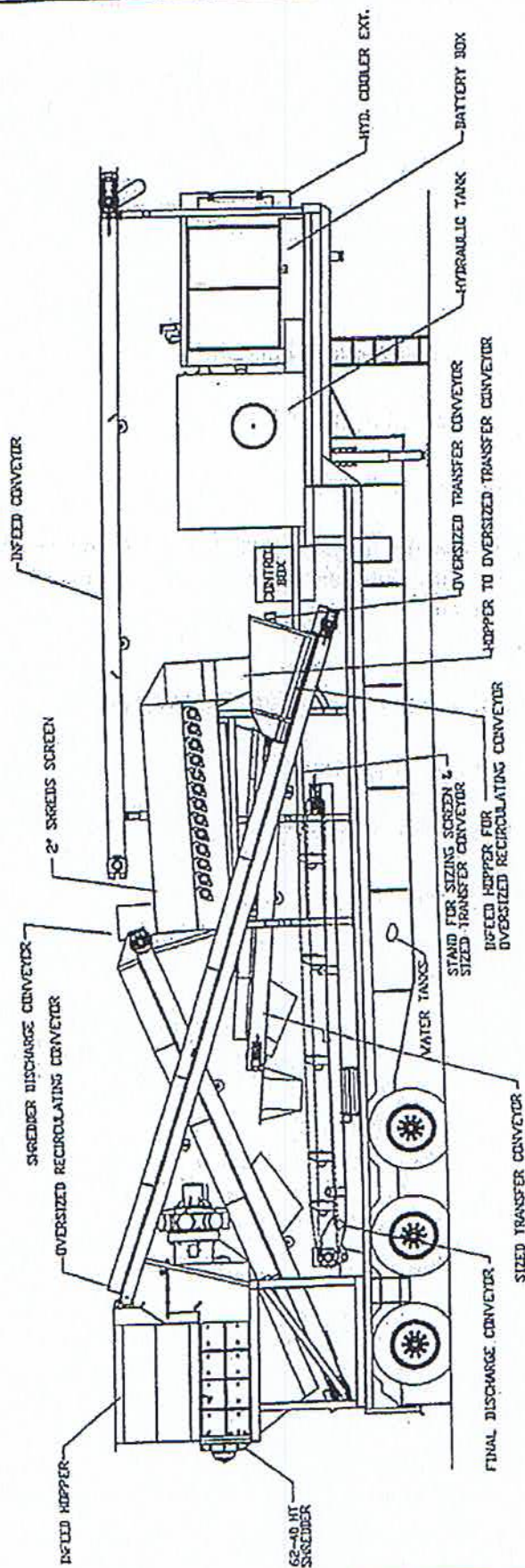
REV

DESCRIPTION

DATE

BY

APPROVED



BILL OF MATERIAL

ITEM NO.	QTY.	REF. ITEM	PART NO.	DESCRIPTION
BILL OF MATERIAL				
GRANUTECH SATURN SYSTEMS CORP.				
GRAND PRAIRIE, TEXAS				
MOBILE TIRE SIZING UNIT-				
RH DISCHARGE				
62-40HT SHREDDER				
SIZE	DWG NO.	REV		
A	D-1753	A		
SCALE:		DO NOT SCALE DRAWING		
SHEET 1		OF 1		
©2002 GRANUTECH SATURN SYSTEMS CORP. PRECAUTIONARY NOTICE. NO PUBLICATION INTENDED.				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

DIMENSIONS IN () ARE TOLERANCES.

ANGLES AND RADIUS SHOWN UNLESS OTHERWISE SPECIFIED.

FRACTIONS: $\pm 1/16$

DECIMALS: ± 0.1

ANGLES: $\pm 1/2^\circ$

ANGLES: ± 0.01

ANGLES: ± 0.005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

ANGLES: ± 0.0005

NEXT ASSY

125

SURFACE ROUGHNESS

SIMILAR TO:

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

WEIGHT: LBS

SATURN MOBILE TIRE SHREDDERS

Saturn has designed and built mobile shredders in the past. We are now manufacturing a new completely self-contained portable tire shredding system.

Saturn's new design features:

- ♦ Self-stowing discharge conveyor
- ♦ Infeed conveyor that will attach and feed from either side of mobile unit
- ♦ Infeed conveyor that rests atop shredder when in travel mode
- ♦ Easy dismantling and reassembly as stationary system

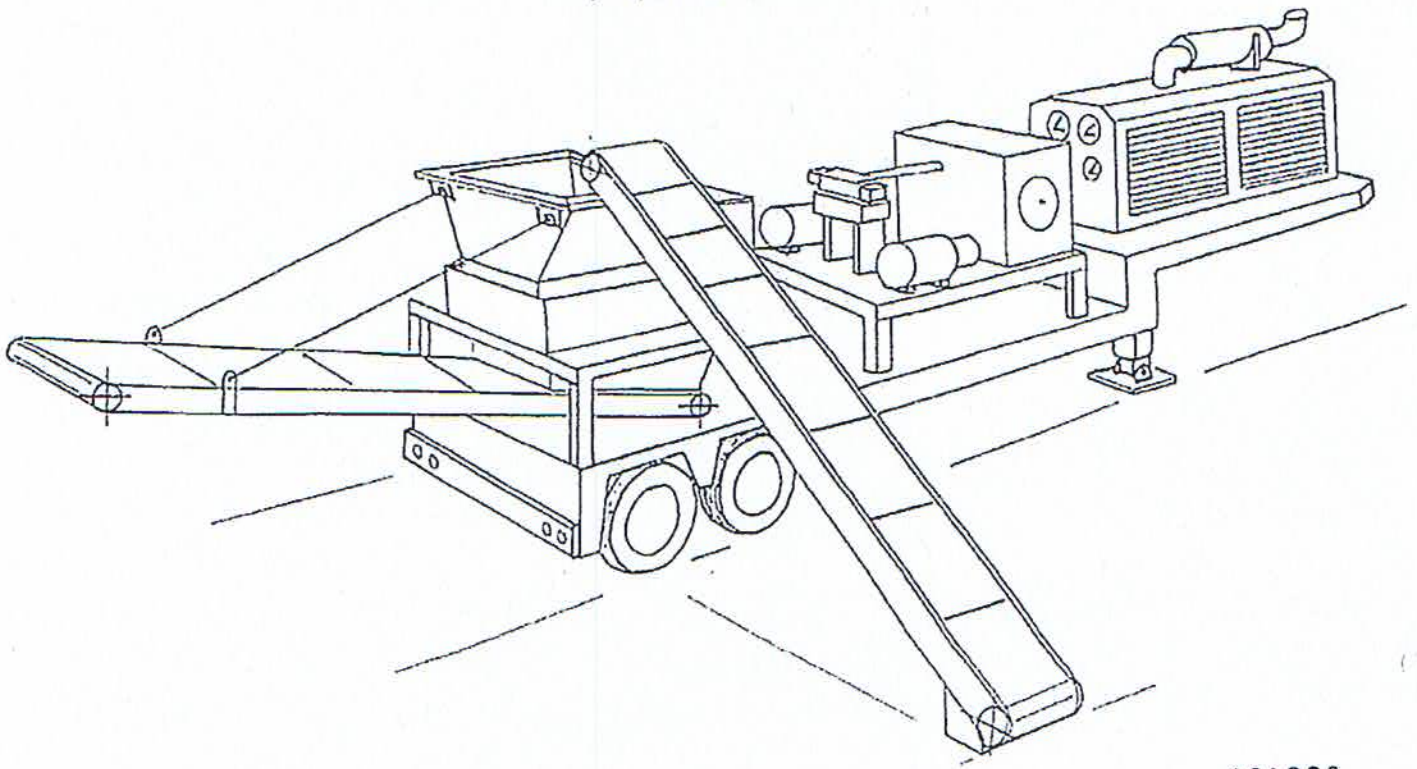
This state-of-the-art system can be the answer to your needs if legislation has closed your landfill to the burial of whole tires. Several states have set their policies, others are sure to follow. Take the time to look at the new Saturn Mobile System.

SATURN SHREDDERS, Division of MAC CORPORATION

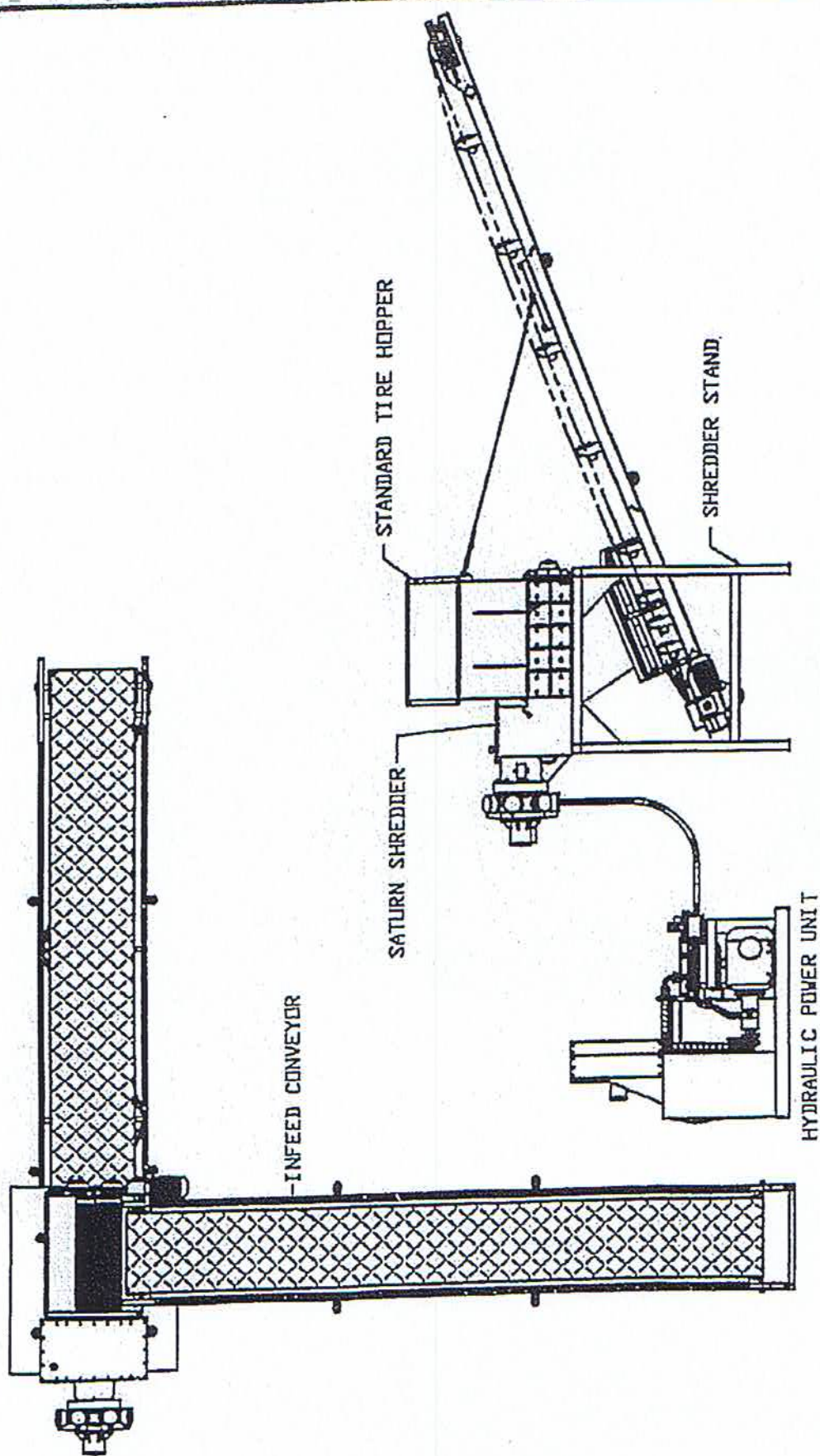
201 East Shady Grove Road

Grand Prairie, Texas 75050

(972) 790-7800



091390

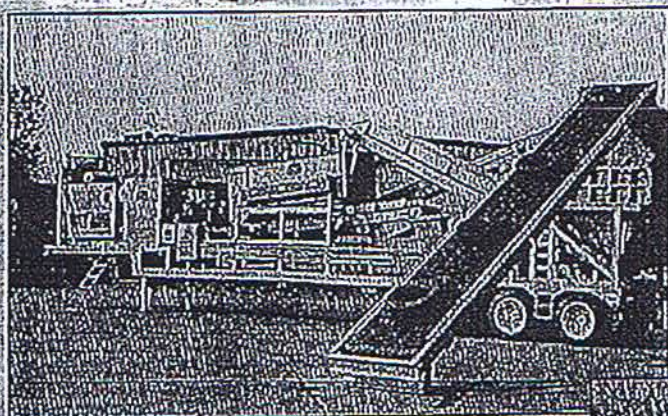


ITEM NO	QTY	RECD	PART NUMBER OR DRAWING NUMBER	DESCRIPTION
LIST OF MATERIALS				
MAC CORPORATION				
GRAND PRAIRIE, TEXAS				
DESCRIPTION				
PRODUCT				
TOLERANCES				
UNLESS NOTED OTHERWISE				
.X ± .02				
.XX ± .010				
.XXX ± .005				
FRACTIONAL ± 1/16				
ANGULAR ± 1/2°				
SURFACE FINISH				
RMS ± .0005				
DO NOT SCALE				
DATE				
DRAWN				
CHECK				
ENGR				
MT				
SHT				
DWG. NO.				
REV				

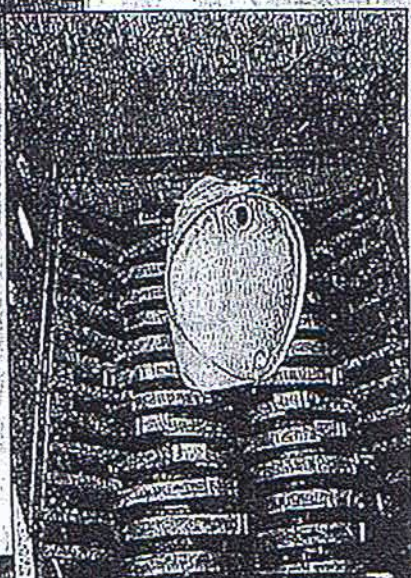
NEXT ASSEMBLY

SATURN SOLID We've got

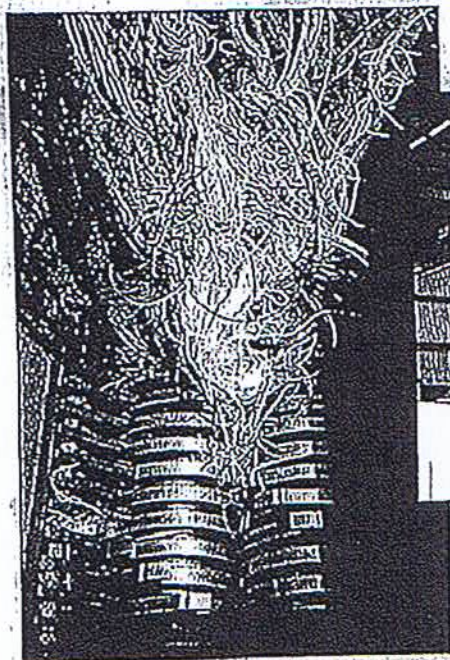
Someone else may have coined the phrase "nobody does it better," introduction more than three decades ago, Saturn Shredders have application possible. Their durability and versatility, coupled with applications ranging from shredding of paper to processing nuclear processing design and installation can also benefit from Granutech from concept through installation and beyond.



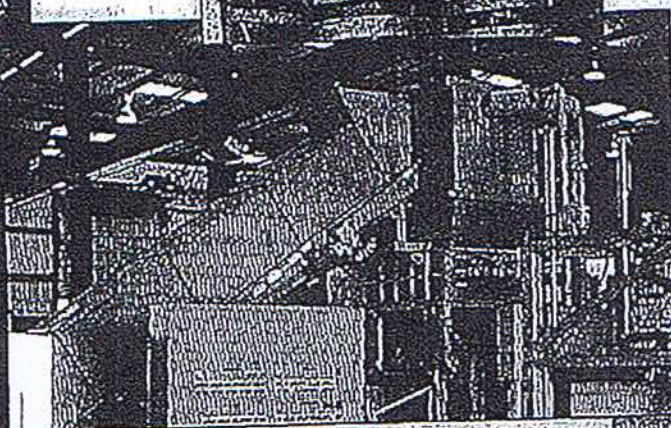
MOBILE TIRE SHREDDING



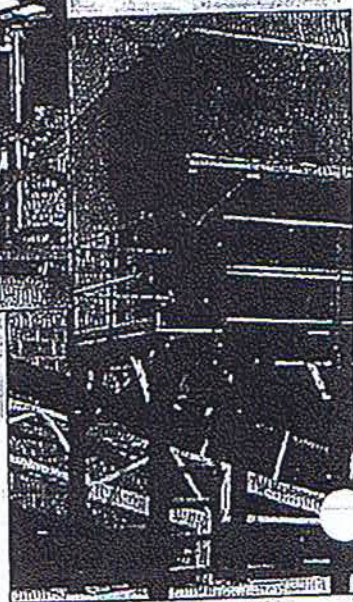
DRUM SHREDDING



CABLE & WIRE PROCESSING



LOW RAD WASTE PROCESSING



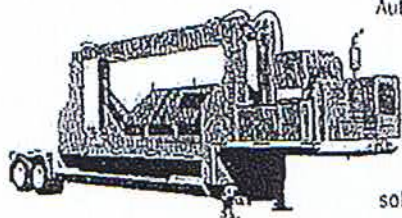
GRANUTECH-SATURN SYSTEMS THE WHOLE STORY

Granutech-Saturn Systems Corporation, offering equipment and peripherals under the Granutech, Saturn Shredders and MAC names, is one of the world's largest manufacturers of equipment and systems for size reduction and material recycling. Since 1965, the Grand Prairie, Texas-based company has demonstrated an unwavering commitment to quality equipment and world-class service for the various industries it serves, both in the U.S. and abroad. Shown here are Granutech-Saturn Systems' primary product lines.

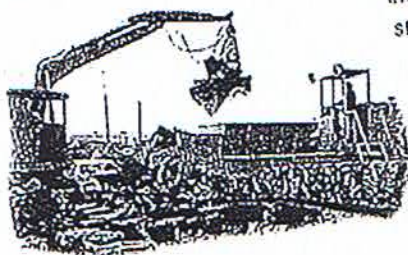
MAC
CRUSHERS & CONVEYORS

GRANUTECH
SATURN
SYSTEMS

SATURN
SHREDDERS



Automobile recyclers and other ferrous/non-ferrous recycling operations have long relied upon MAC flatteners and balers for solid performance and minimal downtime. A full range of product offerings is available from the industry standard "Big MAC" flattener, to modified flattener designs for specialized processing demands.

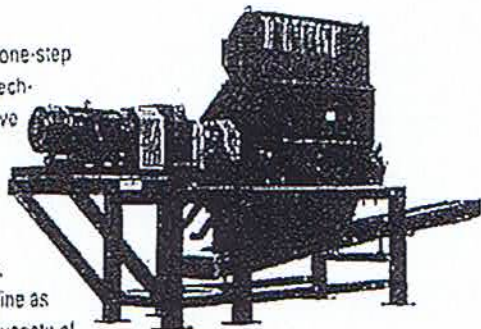
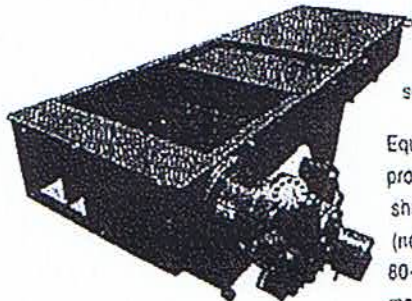


As shown in the previous pages, Saturn Shredders have been providing quality solutions to shredding problems for more than two decades. Today shredders bearing the Saturn name offer the broadest range of choices possible for use in a wide range of applications and industries.



When size reduction needs call for secondary processing, one-step reduction and sizing or granulation and powderization, Granutech-Saturn Systems Corporation leads the way with solid, effective solutions.

Equipment offered by Granutech-Saturn Systems includes: the Grizzly processor (shown at right); Roto-Grind single rotor shred/sizing units (shown at left); and the Granutech G-3 granulator, (not shown) which, with available options, can produce material as fine as 80-mesh. All Granutech-Saturn Systems equipment is offered in a variety of models and sizes to suit your processing needs.



The bottom line? We do size reduction and we do it very, very well. If one-stop shopping is too trite a concept, then think of it as the most comprehensive source available for solutions to your recycling needs. No matter how you choose to look at it, we can provide the equipment — and the answers — you need.