ATTACHMENT 5

PREPARDNESS AND PREVENTION

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The inspection schedule for facility safety and emergency equipment is provided in Attachment 3. Inspection schedules for equipment specifically used for the management of waste in the container storage areas and the storage areas themselves is also included in Attachment 3.

1.1.1 Internal Communications

Communication inside Clive is achieved through a telephone system and cell phones. Telephones are located or cell phones provided so that each employee has immediate access to one from his/her workstation. From each telephone or cell phone an employee can call any other telephone at Clive, and can be connected to an outside phone line.

1.1.2 External Communications

External facility communications are available through the local telephone company. Local (Salt Lake City or Tooele City) or long-distance telephone connections are available. Incoming calls will be transferred to the telephones located throughout the facility as necessary.

1.1.3 Emergency Equipment

Portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment are available at the facility. A description and locations of emergency equipment for the facility are in the Contingency Plan, Attachment 6 of this permit. The Emergency Equipment List is located in Section 4.0 of this attachment.

1.1.4 Water for Fire Control

Water for fire fighting is stored in a reservoir and distributed through a pipe network.

The fire water flow meets NFPA 30, Table D-4-6.2.1 requirements and is based on 0.3 gallons per minute per square foot over an area of 2,550 square feet plus a hose stream flow of 500 gallons per minute. This flow rate is 1265 gallons per minute. NFPA 30 requires that this minimum flow rate be sustainable for two hours and that the volume expended be replenished within eight hours. The volume required for the fire water supply is 151,800 gallons.

The water storage tank provided at Clive has a capacity greater than 685,000 gallons. This volume allows for an adequate fire water reserve.

The two fire pumps meet NFPA 20 requirements. Both pumps have an internal combustion engine drive and are rated to supply adequate volumes of water at sufficient pressure to effectively respond to fires. A description of other fire fighting equipment at Clive is located in Section 4.0 of this attachment.

1.2 Aisle Space Requirement

A system of interior facility roads is available for moving and positioning emergency response vehicles. Building interiors, containment systems, and waste handling areas also have access aisles to move and position hand held and portable emergency response equipment. Adequate aisle space will be maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment to any area of the facility. A minimum aisle space of two and one-half feet will be maintained at Clive facility.

2.0 Preventive Procedures, Structures, and Equipment

Various procedures, structures, and equipment have been incorporated into the design and operating procedures of the facility to minimize hazards to human health and the environment. Examples of procedures, structures and equipment utilized to prevent hazards include:

- A list of emergency equipment and a description of the emergency procedures are provided in this plan and the Contingency Plan, Attachment 6 of this permit. Both plans will be available at the facility at all times.

- Special precautions will be taken to prevent accidental ignition or reaction of ignitable wastes or the mixing of incompatible wastes. See Section 3.0 of this attachment.

- Forklifts and hand trucks will aid in the safe transport of cargo.

- Applicable procedures provided in American Petroleum Institute Publication 2009, *Safe Practices in Gas and Electric Cutting and Welding in Refineries, Gasoline Plants, Cycling Plants, and Petrochemical Plants*, Fourth Edition, March 1982, will be observed during repairs performed near ignitable materials.

2.1 Unloading Operations

Various procedures, structures, and equipment have been incorporated into the loading and unloading operations to prevent environmental and health hazards including:

- Facility operations personnel will receive training on proper unloading and loading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. Employees will be required to comply with OSHA regulations regarding operations, such as the restrictions on the number of riders allowed on a powered industrial truck, the placement of wheel chocks for trailers before the trailer is entered, etc.

- All waste loading, unloading, and storage will be performed within containment areas. The containment areas are constructed of concrete and consist of a floor slab with either curbs or walls. The concrete surface of the containment is coated with a sealant and sloped to sumps to allow accumulation and removal of leaks or spills.

- Any metal bulk liquid container of ignitable material will be grounded by means of a heavy clamp and cable before loading or unloading. Prior to loading or unloading a bulk liquid container, the operator will visually check that valves are in the correct position (either open or closed depending on the valve function), hoses are secure, and any needed hose connection plugs and caps are in place. Immediately following the loading or unloading of a bulk liquid container, the operator will visually check that valves are in the correct position and any needed hose connection plugs and caps are in place.

- Bulk solid and sludge containers arrive by truck or rail transport. The containers include sludge boxes, intermodal containers, end-dump trucks, and railroad gondolas. Bulk solids in railroad gondolas are unloaded using a backhoe or trackhoe in the Bulk Materials Building, Unit 255.

- Smaller capacity containers including drums or cartons are unloaded from and occasionally loaded into truck trailers. These truck trailers are loaded or unloaded using an industrial truck or hand truck. These smaller capacity containers will typically be 55-gallon drums, although larger and smaller containers will also be loaded and unloaded.

2.2 Run-off

The facility has containment systems to prevent migration of surface and subsurface liquids from waste handling areas to other areas of the facility, or to the environment. This liquid could be precipitation from storm events; or spills and leaks of hazardous waste. The surface of the containment systems is coated with a sealant and sloped toward one or more sumps to allow collection and removal of any accumulated liquids. The accumulated liquid is sampled, analyzed, and handled in accordance with the Waste Analysis Plan. Containment systems not protected from precipitation by a building have been designed to accommodate the precipitation from a 25-year, 24-hour storm event (1.9 inches). Storm water from precipitation falling outside of the containment areas described above will be controlled to prevent run-on of the storm water into a waste management unit. This will be performed by a storm water diversion and collection system.

All spills of hazardous waste will be promptly controlled and removed to prevent spread of contaminants. The spilled material and any absorbent used will be collected and placed into appropriate containers and managed as a hazardous waste.

2.3 Water Supplies

Operation of Clive will require two types of water: (1) potable water, and (2) plant water. Potable water will be used for personnel decontamination, eye-wash stations, and safety showers. Plant water will be used for equipment decontamination, fire fighting, etc. The plant water will be stored in the Fire Water Storage Tank. The potable water will be stored in the Treated Water Storage Tank.

Potable and plant water will be distributed throughout the facility by separate water delivery systems. Backflow preventers will be used, if necessary, to prevent contamination of the water in a delivery system by hazardous waste.

2.4 Equipment and Power Failure

There are no critical units at Clive for which electric power is required in an emergency.

The equipment used to manage hazardous waste at Clive is generally powered by diesel or internal combustion engines. Normally, the electrical requirements of Clive are met with power purchased from Utah Power & Light.

No hazardous waste management units are critical. The fire water system is critical, but it is provided with backup IC engine drives. Therefore, no emergency power systems are required at Clive.

2.5 Personnel Protection Equipment

Personnel protection equipment available at the facility includes the following:

- Self-contained breathing apparatus (SCBA). A number of devices consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Personnel can use the SCBA's to enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air. The SCBA's are available ateither the main building in the bulk operation office or Building 101.

- Cartridge air mask. There are two types of cartridge masks, full face and half face. They are both equipped with fittings to which contaminant-specific cartridges are attached. Each employee will be issued a mask and cartridges as necessary appropriate for his/her work area.

- Protective clothing. Employees working at Clive are issued hard hats, protective coveralls, waterproof safety boots, specialized gloves, and hearing protection on a routine basis, as necessary.

Minimum personnel protection equipment for all people within Clive and in or around hazardous waste management units (i.e.; employees and visitors) will be a hard hat, and eye protection. This minimum protection level will not apply to personnel within passenger vehicles, or any other office space within the facility in which the risk of a head or eye injury does not exceed normal office work risks. Personnel protection equipment for employees performing tasks within the waste management units may exceed this minimum protection level.

Personnel at Clive will be responsible for decontaminating their own personnel protection equipment. Cartridge type respirators will be washed daily with soap and water at the end of the

individuals work shift. The chemically resistant coveralls and gloves are disposable and will be discarded as necessary and at least daily.

3.0 Ignitable or Reactive Waste

3.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste and Mixing of Incompatible Wastes

Precautions are taken at the facility during storage, transportation, and handling to prevent the accidental ignition or reaction of waste and mixing of incompatible wastes. These precautions are intended to prevent unwanted heat, pressure, fire, explosion, toxic gases or fumes which could result in damage to the structural integrity of any portion of the facility or cause a threat to human health or the environment. The precautions will include:

- Ignitable waste will be protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, smoking, and sparks (static, electrical or mechanical). Bulk liquid containers (tank trailers, railroad tanks and transport tanks) of ignitable material will also be grounded with a cable and clamp between the container and the ground prior to loading or unloading.

- Ignitable and reactive waste will be protected from spontaneous ignition from heat producing chemical reactions by segregating incompatible waste streams.

- Buildings which enclose waste handling operations will be ventilated to prevent an accumulation of toxic mists, fumes, dusts, or gases; or flammable fumes or gases.

- The incompatibility of wastes are determined in accordance with the procedures outlined in the Waste Analysis Plan, Attachment 1 of this permit.

3.2 Management of Ignitable or Reactive Wastes in Containers

Ignitable or reactive wastes in containers may be solid, sludge or liquid. Management of ignitable or reactive wastes in containers will include the following:

- Large and small containers of ignitable and reactive solid or sludge waste will be unloaded at Unit 105 or Unit 106. Both are located in excess of fifty feet from the facility boundary.

3.3 Management of Incompatible Wastes in Containers

Management of incompatible wastes in containers will include the following precautions:

- Incompatibility between two wastes or a waste and a container will be determined from published scientific or engineering literature, laboratory tests, or previous experience, in accordance with the Waste Analysis Plan, Attachment 1 of this permit.

- Containers of waste received within one truck trailer will be assumed to contain compatible waste as required by the U.S. Department of Transportation regulations. These containers will be unloaded into a common containment area for incoming load analysis in accordance with the Waste Analysis Plan. If subsequent identification of the waste during the incoming load analysis reveals the existence of incompatible wastes in a common containment area, the container holding the incompatible waste will be removed and placed in an appropriate containment area. Attachment 8 of this permit provides a description of the container management procedures.

- Incompatible wastes will not be placed in the same container. Wastes added to containers must be compatible with the contents of the container and the container itself.

- The Thaw Unit (105) and Rail/Truck Transfer Bay (535) are located at least 50 feet from the facility boundary.

4.0 Emergency Equipment

The following is a list of the emergency equipment, spill control equipment, communication systems, alarm system, and decontamination equipment which may be utilized at the facility.

- Internal facility communications systems. Communications inside the Clive facility are achieved through a telephone system and cell phones. There will be telephones located so that each employee will have access to one from his/her workstation. From each telephone an employee can call any other telephone in the Clive facility and can be connected to an outside phone line. The telephone system is equipped with an uninterruptible power supply for reliability during a loss of primary power. Cell phones are available at each waste management unit, and to various operations and/or management personnel based on operational requirements to supplement the telephone system.

- External facility communications systems. The Clive facility is connected to the local telephone system.

- Overpack drums. An overpack drum is a container large enough to hold a standard 55-gallon drum. They are available at the facility and are used to hold smaller containers which are damaged or leaking.

- Absorbent agents. Absorbent agents are dry powders, granular materials, mats or pads, etc., which can reduce or stop the spread of spilled liquids and allow the spilled material to be recovered as a solid. These agents will, at a minimum, be available at Rail/Truck Transfer Bay (Unit 535) and the Containerized Bulk Storage Unit (Unit 106). The Clive facility may, at its discretion, place absorbents at various other locations as well

- Fire water system. The fire water system consists of a water tank, pumps, water pipes, hose stations, monitors, hydrants, and building sprinkler systems. The water tank has a capacity of 685,230 gallons of water with 371,166 gallons held as a minimum for fire

fighting (more than a 120 minute supply at 2500 gallons per minute). The fire water pumps are rated to provide the required volume at a pressure high enough to operate foam equipment.

- Fire extinguishers. Fire extinguishers of various sizes from 2½ to 50 pounds, rated for Class A, B, and C fires, are located throughout the Clive facility. Fire extinguishers for Class D (combustible metals such as magnesium or sodium) fires are also available. These fire extinguishers are operated by pulling a pin and squeezing the handle lever while directing a short hose or the extinguisher nozzle at the burning surface.

- Vacuum truck. There will be at least one vacuum truck at the Clive facility for picking up liquids from the various sumps throughout the facility. If solids need to be picked up, conventional equipment such as brooms, shovels, vacuums, frontend loaders, etc. will be used. The vacuum truck will be stored at the Clive facility, but will be available to the Grassy Mountain Facility, and for spill response, on an as needed basis.

- Safety shower and eye wash stations. There are several locations where a supply of water will be available through shower heads and bubblers for employees to flood themselves with water if they are sprayed with a hazardous substance. These stations operate by simple pull handles and foot peddles. At least one safety shower and eye wash station will be located in or near each waste management area.

- Self-contained breathing apparatus (SCBA). A number of devices consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Response personnel can use the SCBAs to enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air.

- Cartridge air mask. There are two types of cartridge masks, full face and half face. They are both equipped with fittings to which air contaminant-specific cartridges are attached. Air to be inhaled by the wearer is filtered through the cartridge and the specific contaminants are removed. Each employee will be issued a mask and cartridges appropriate for his work area. When the mask is issued, if the model or size of the mask changes, and at least annually, the mask will be fit-tested on the employee. Cartridges for other contaminants and both styles of masks will be stocked at the safety equipment storage area.

- First aid stations and first aid kits. There are two first aid stations on site. One, in Building 061, the maintenance building, and the other in Building 052, the Main Office. Each will contain sufficient medical supplies to treat injury conditions ranging from minor injuries to major injuries for which an emergency medical technician (EMT) is qualified to treat. Medicine is also be available to help employees alleviate symptoms of minor illnesses i.e., headaches, hayfever, colds, etc. Located in at least each waste management area are first aid kits which include a supply of materials necessary for a person to treat severe bleeding and give CPR, i.e., heavy bandages, latex gloves, mouth-to mouth resuscitation mask.

- Protective clothing. Employees working at the Clive facility will be issued hard hats, safety footwear and safety glasses. Other protective clothing, such as protective coveralls, waterproof safety boots and specialized gloves are provided based on the requirements of the area or job function being performed. The hard hats are made of high impact plastic. The protective coveralls are made from polyethylene fibers (such as Tyvek or equivalent) and are disposable. The waterproof safety boots are solvent resistant synthetic rubber. The gloves are latex rubber, synthetic rubber, or knit (cotton, polyester, etc.) depending upon the specific job requirements. A supply of the job or area specific protective clothing will be available for each waste management unit and kept at the safety equipment storage area.

- Portable pumps. A number of portable pumps will be available for removing liquids from sumps. The type of pump may include centrifugal, diaphragm, piston (trash pump), submersible, etc. Gasoline, air or electricity may be used to power these pumps.

- Hand tools. Brooms, buckets, absorbent materials and detergent will be kept in the safety equipment storage area. These may be used in spill control and decontamination activities.

- Decontamination kit. Shovels, brooms, detergent, and absorbent towels will be kept in or near each waste management area. These may be used in spill control and decontamination activities.