STORM WATER POLLUTION PREVENTION PLAN

University of Nevada, Las Vegas

4505 South Maryland Parkway
Las Vegas, Nevada 89154

Revised October 10, 2017
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Version 1.3, 10/10/17

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LIST OF ACRONYMS AND ABBREVIAT IONS

AST	Aboveground Storage Tank
EPA	U.S. Environmental Protection Agency
NDEP	Nevada Division of Environmental Protection
NPDES	National Pollutant Discharge Elimination System
PE	Professional Engineer
POTW	Publicly Owned Treatment Works
SPCC	Spill Prevention, Control, and Countermeasure
STI	Steel Tank Institute
UST	Underground Storage Tank
SWPPP	Storm Water Pollution and Prevention Plan

Part 1: Introduction

Purpose

The purpose of this document is to provide a framework for a future Storm Water Pollution and Prevention Plan (SWPPP). This document should be followed by a final plan once UNLV is authorized for an Industrial Storm Water permit. At this time, an Industrial Storm Water permit is not necessary as discussed with the Nevada Department of Environmental Protection (NDEP). Although an industrial permit is not required, this SWPPP recommends industrial Best Management Practices (BMP s) also part of the UNLV Spill Prevention Control and Countermeasure Plan (SPCC), consistent with Clark County guidelines. Therefore, this SWPPP should be reviewed in concert with UNLV s SPCC.

A complete copy of this SWPPP Plan is maintained at the UNLV Risk Management and Safety Department office. The department is attended from 8:00 AM to 5:00 PM, 5 days per week (closed on Saturdays and Sundays).

June 14, 2010 Revision

This plan was reviewed at the beginning of June 2010. A campus tour was conducted the week of June 1, 2010 by George Fratus and Gary Snodgrass, of Environmental Management and Laboratory Safety (EMLS) group of the Risk Management and Safety Department. The purpose was to determine if there are any new potential sources that could impact the storm sewer system. There are no new sources. One source, the campus gas station located at the central area of the campus is being closed, thereby eliminating that potential threat to the storm sewer system. In addition, the 2000 gallon capacity diesel tank at the rear (south) of the Lied Library has been enhanced with a secondary containment to preclude an overfill spill into the storm sewer.

This revision captures the pertinent changes to the physical area and documents improvements to protect the storm sewer.

George Fratus, Manager, Environmental Management and Laboratory Safety

Signature _____ Date _____

Part 2: General Facility Information

2.1 Facility Description

2.1.1 Location and Activities

UNLV is a public facility and university serving higher education in southern Nevada. The facility handles, stores, and primarily uses petroleum products in the form of gasoline and natural gas associated with a motor pool located in the facilities maintenance complex of the main campus, and back-up generators to its various building facilities. UNLV receives petroleum products by

common carrier or tanker truck. The products are stored in various locations throughout the University, ranging from 50 gallons to 2,000 gallons.

UNLV never officially stops operating. However, there are times when, because of emergency situations a facility or the entire campus may be closed. In an effort to ensure the safety of the faculty and staff, emergency conditions will be monitored so that a decision to close can be made in a timely fashion. Refer to the Emergency Operations Center Guidelines for specific direction and contact information in the event of an emergency.

The Site Plan included in Appendix A of this document shows the location and layout of the facility. The site plan is taken from the USGS 7.5 quadrangle for the Las Vegas Valley (Figure A-1).
The Facility and Drainage Map (Figure A-2) shows the location of AST s, UST s, the storm drain system and, buildings in relation to the UNLV campus.

UNLV is located in unincorporated Clark County, Nevada, bounded by Flamingo Road on the north, Tropicana Avenue on the south, Paradise Road on the west, and Maryland Parkway on the east. Onsite storm drains convey storm water runoff to storm water drains on Maryland Parkway into Flamingo Wash, the Las Vegas Wash, and finally to Lake Mead. Flamingo Wash is considered Waters of the United States (WOUS).

The site includes many building structures, such as classroom facilities, a sports complex, student housing complexes and other structures. Petroleum products are stored throughout campus mostly associated with back-up generators. Most storage tanks are comparatively modern as the UNLV campus has undergone recent construction and remodeling.

2.1.2 Oil Storage

Oil storage at the facility consists of various tanks, including a 500 gallon above ground tank for emergency generation at the Thomas and Mack sports facility, a 380 gallon tank for emergency generation at Cox Pavilion, a 1,000 gallon tank for emergency generation at the Classroom Building Complex and a 2,000 gallon tank for emergency generation at the Lied Library. Many other smaller tanks are scattered throughout the University at various locations. The capacities of oil containers present at the site are listed below and are also indicated on the facility map in Figure A-2. All containers with capacity of 50 gallons or more are included.

Table 2-1a: Campus Fuel Storage Tank Inventory

Tank No	Building	Tank	Make	Model/Part #	Serial #	Capacity	Primary EMG Vent	Annular EMG. Vent
1	ARC	Diesel Emergency Generator	----	96278	11191	115 Gallons	51644 cf/hr	N/A
2	BEH	Diesel Emergency Generator	----	----	-----	300 Gallons	----	N/A
3	BEH	Diesel	----	-----	-----	100 Gallons	N/A	N/A
4	BEH	Diesel	----	----	-----	~1100 Gallons	N/A	N/A
5	BHS	Diesel	Pryco	----	-----	100 Gallons	N/A	N/A
6	BPB	Diesel	Pryco	-----	------	100 Gallons	N/A	N/A
7	CBC	Diesel Emergency Generator	Pryco	PY5B1000	04320257	1000 Gallons	------	N/A
Tank No	**Building**	**Tank**	**Make**	**Model/Part #**	**Serial #**	**Capacity**	**Primary EMG Vent**	**Annular EMG. Vent**
8	FND	Diesel Emergency Generator	Onan	159-1474	ODT-16893	100 Gallons	63,200 cf/hr	N/A
9	Greenspun	Diesel Emergency Generator	United Power Products	CPG1000	650139	1000 Gallons	265,000 cf/hr	N/A
10	LLB	Diesel	Brown-Minneapolis	------	-------	2000 Gallons	195,250 cf/hr	219,490 cf/hr
11	LLB	Red Dye	-----	-----	-----	300 Gallons	N/A	N/A
12	LLB	Diesel Cooling Pump	Spectrum	-----	------	50 Gallons	N/A	N/A
13	LLB	Diesel	-----	------	-------	2000 Gallons	N/A	N/A
14	MSM/HRC	Diesel Emergency Generator	Onan	PY5B50	07218855	50 Gallons	N/A	N/A
15	OM3	Diesel Portable Generator	------	484000	024531	100 Gallons		

16	OM3	Diesel Portable Generator	Whisper-Watt	------	-------	500 Gallons+ 129 Gallons	105,000 cf/hr	N/A
17	OM3	Diesel Portable Light	-------	---------	-------	-------	--------	N/A
18	OM3	Diesel Portable Generator	Transfer-Flow	MultiQuip	1198772078 00F796F28	41 Gallons	--------	N/A
19	PSP	Diesel Emergency Generator	-------	99125	11940	85 Gallons	28950 cf/hr	N/A
20	SCS	Diesel	-------	--------	-------	100 Gallons	N/A	N/A
21	Science and Engineering Building	Diesel Emergency Generator	-----	-------	------	------	-------	N/A
22	TBE	Diesel Emergency Generator	-------	-------	-------	150 Gallons	--------	-------
23	W HI	Diesel Emergency Generator		41075	------	500 Gallons	34,900 cf/hr	63,400 cf/hr
24	W HI	Diesel Emergency Generator	Kohler			300 Gallons	63,200 cf/hr	N/A
25	WRI	Diesel Emergency Generator	Wedlake Fabricating Inc	770087	-------	400 Gallons	105460 cf/hr	N/A

Table 2-1b: Student Life Facilities Fuel Storage Tank Inventory

Tank No	Building	Tank	Make	Model #	Serial #	Capacity	Primary EMG Vent	Annular EMG. Vent
26	MSU	Diesel Emergency Generator	United Power Products	cps-0159-1473	641147	366 Gallons	105,000 cf/hr	N/A
27	TON	Fire Pump	WE MAC Manufacturing	A671095	N/A	75 Gallons	42,100 cf/hr	N/A
28	TON	Diesel Emergency Generator	Onan	159-1473	odt-199-39	366 Gallons	105,000 cf/hr	N/A
29	KRH	Fire Pump	Chicago Boiler Co.	44923	N/A	60 Gallons	48,460 cf/hr	N/A
30	DAY	Diesel Emergency Generator	Onan	N/A	Odt-292	500 Gallons	105,00 cf/hr	N/A
31	RWC	Diesel Emergency Generator	Onan	159-1575-02	ODT-34143	400 Gallons	105,000 cf/hr	N/A

Table 2-1c: Thomas & Mack/ Cox Pavilion

Tank No.	Building	Tank	Make	Model #	Serial #	Capacity	Primary EMG Vent	Annular EMG. Vent
32	TMC	Diesel Emergency Generator	Fireguard Above-ground tank	B-464210	17608	500 Gallons	114,900 cf/hr	129,300 cf/hr
33	TMC	Diesel Emergency Generator	------	------	------	100 Gallons	-------	N/A
34	COX	Diesel Emergency Generator	Olympian Power Systems Tank	Belly Tank	N/A	380 Gallons	81, 050 cf/hr	N/A
Total Oil Storage:	**13,387 gallons**							

Other containers: (1) oil/water interceptor

Note: An oil/water interceptor is recommended to treat diesel spills at Maryland Parkway prior to discharge into the offsite storm drain system. The oil/water interceptor should be one of various Best Management Practices (BMP s) recommended for the UNLV campus. Discharge from UNLV facilities include storm water collected from the paved areas on campus. No external oil tanks are associated with the oil/water interceptor.

2.2 Evaluation of Discharge Potential

2.2.1 Distance to Navigable Waters and Adjoining Shorelines and Flow Paths

The facility is located immediately south of Flamingo Wash in south-central part of the Las Vegas Valley. Drainage generally flows west to east across campus, and onto Maryland Parkway, thence north to Flamingo Road, and to Flamingo Wash. Existing drainage is characterized by urban runoff associated with commercial development in and around the UNLV campus. A relatively high percentage of the campus is paved, especially in the vicinity of the Thomas and Mack sports complex and Cox Pavilion. Storm flows are conveyed by both surface flow and through an existing, on-campus storm drain system. It is assumed that most storm water runoff from the UNLV campus that reaches Maryland Parkway does not cross the street, and is diverted north to Flamingo Road. Storm flows originating from UNLV should split at the Maryland Parkway/Flamingo Road intersection, with some flows continuing north approximately 0.25 miles to Flamingo Wash, and other flows continuing east along Flamingo Road. The Clark County Regional Flood Control District (CCRFCD) Master Plan Update of the Las Vegas Valley (2002) indicates a future storm drain facility in Maryland Parkway that drains directly north to Flamingo Wash.

PART 3: BMP s

This facility proposes to use oil/water interceptors and dikes as part of its drainage system to contain oil discharged into the on-campus storm drain system. As described in Section 3.5 of this Plan, the operational and emergency oil storage capacity of the oil/water interceptor is sufficient to handle the quantity of oil expected to be discharged from a transportation spill on campus.

3.1 Facility Layout Diagram

Figure A-1 in Appendix A shows the general location of the facility on a U.S. Geological Survey topographic map. Figure A-2 in Appendix A presents a Facility and Drainage Map and the location of storage tanks. Appendix A indicates the location and content of ASTs, USTs, and transfer stations and connecting piping.

3.2 Spill Reporting

The discharge notification form included in Appendix I should be completed upon immediate detection of a discharge and prior to reporting a spill to the proper notification contacts.

3.3 Potential Discharge Volumes and Direction of Flow

Table 3-1 presents expected volume, discharge rate, general direction of flow in the event of equipment failure, and means of secondary containment for different parts of the facility where oil is stored, used, or handled. Potential for discharge on campus is greatest when tanks at various campus locations are being filled.

Table 3-1: Potential Discharge Volumes and Direction of Flow

Tank No.	Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
	Fuel Storage Area				
1	Failure of tank at Paul B. Sogg Architecture Building (ARC)	1 to 115	Gradual to Instantaneous	Vicinity of the tank. Does not reach storm drain.	YES;
2	Failure of tank at Frank and Estelle Beam Hall (BEH)	1 to 300	Gradual to Instantaneous	Storm drain north of building, then east to Maryland Parkway	YES;
3	Failure of tank at Frank and Estelle Beam Hall (BEH)	1 to 100	Gradual to Instantaneous	Storm drain to the north of building, then east to Maryland Parkway	YES;
4	Failure of tank at Frank and Estelle Beam Hall (BEH)	1 to 1100	Gradual to Instantaneous	Storm drain to the north of building, then east to Maryland Parkway	YES;
5	Failure of tank at Bigelow Health Sciences (BHS)	1 to 100	Gradual to Instantaneous	Vicinity of the tank. Does not reach storm drain.	YES;
6	Failure of tank at Bigelow Physics Building (BPB)	1 to 100	Gradual to Instantaneous	Vicinity of the tank. Does not reach storm drain.	YES;
7	Failure of tank at Classroom Building Complex(CBC)	1 to 1000	Gradual to Instantaneous	Storm drain to Maryland Parkway	YES;
8	Failure of tank at Foundation Building (FND)	1 to 100	Gradual to Instantaneous	Vicinity of the tank. Does not reach storm drain.	YES;
9	Failure of tank at Greenspun Building	1 to 1000	Gradual to Instantaneous	Storm drain to Maryland Parkway	YES;
10	Failure of tank at Lied Library (LLB)	1 to 2000	Gradual to Instantaneous	Contained inside the building.	YES;
11	Failure of tank at Lied Library (LLB)	1 to 300	Gradual to Instantaneous	Contained inside the building.	YES;
12	Failure of tank at Lied Library (LLB)	1 to 50	Gradual to Instantaneous	Storm drain and drop inlet south of tank enclosure/ building, east to Maryland Parkway	YES;
13	Failure of tank at Lied Library (LLB)	1 to 2000	Gradual to Instantaneous	Storm drain and drop inlet south of tank enclosure/ building, east to Maryland Parkway	YES;
14	Failure of tank at Marjorie Barrack Museum/Harry Reid Center (MSM/HRC)	1 to 50	Gradual to Instantaneous	Storm drain south of building, then north, and east to Maryland Parkway	YES;
15	Failure of tank at Operations/Maintenance 3 (OM3)	1 to 100	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;

Tank No.	Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
16	Failure of tank at Operations/Maintenonce 3 (OM3)	1 to 500/129	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;
17	Failure of tank at Operations/Maintenonce 3 (OM3)	1 to ?	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;
18	Failure of tank at Operations/Maintenonce 3 (OM3)	1 to 41	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;
19	Failure of tank at Claude I Howard Public Safety (PSP)	1 to 85	Gradual to Instantaneous	Storm drain north of building, then east to Maryland Parkway	YES;
20	Failure of tank at System Computing Services (SCS)	1 to 100	Gradual to Instantaneous	Storm drain north of building, then east to Maryland Parkway	YES;
21	Failure of tank at Science and Engineering Building	-----	Gradual to Instantaneous	East to storm drain , then north, and east to Maryland Parkway	YES;
22	Failure of tank at Thomas T. Beam Engineering Complex (TBE)	1 to 150	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;
23	Failure of tank at Juanita Greer White Sciences Building (WHl)	1 to 500	Gradual to Instantaneous	Storm immediately south of building, then east to Maryland Parkway	YES;
24	Failure of tank at Juanita Greer White Sciences Building (WHl)	1 to 300	Gradual to Instantaneous	Storm immediately south of building, then east to Maryland Parkway	YES;
25	Failure of tank at John S. W right Hall (WRl)	1 to 400	Gradual to Instantaneous	Storm drain east to Maryland Parkway	YES;
26	Failure of tank at Memorial Student Union (MSU)	1 to 366	Gradual to Instantaneous	East to Maryland Parkway, and into storm drain	YES;
27	Failure of tank at Tonopah Residence Complex (TON)	1 to 75	Gradual to Instantaneous	Contained inside the building.	YES;
28	Failure of tank at Tonopah Residence Complex (TON)	1 to 366	Gradual to Instantaneous	Contained inside the building.	YES;
29	Failure of tank at Kitty Rodham Residence Hall (KRH)	1 to 60	Gradual to Instantaneous	Contained inside the building.	YES;
30	Failure of tank at Dayton Complex (DAY)	1 to 500	Gradual to Instantaneous	South to Tropicana, then east to Maryland Parkway	YES;

Tank No.	Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
31	Failure of tank at Sunset Recreation and Wellness Center (RWC)	1 to 400	Gradual to Instantaneous	Vicinity of the tank. Does not reach storm drain.	YES;
32	Failure of tank at Thomas and Mack (TMC)	1 to 500	Gradual to Instantaneous	Overland to Tropicana, or via storm drains , both conveyances to Maryland Parkway	YES;
33	Failure of tank at Thomas and Mack (TMC)	1 to 100	Gradual to Instantaneous	Contained inside the building	YES;
34	Failure of tank at Cox Pavilion (COX)	1 to 380	Gradual to Instantaneous	Overland to Tropicana, or via storm drains , both conveyances to Maryland Parkway	YES;

3.4 Containment and Diversionary Structures

BMP s at this facility include a combination of structures (e.g., dike, berm, built-in secondary containment), drainage systems (e.g., oil/water interceptor), and land-based spill response (e.g., drain covers, sorbents) to prevent oil from reaching navigable waters and adjoining shorelines:

- For bulk storage containers:
    - **Dike.** A concrete dike enclosure is recommended around fixed aboveground storage tanks, and other locations, as described in this Plan.
    - **Double-wall tank construction.** Most all fixed and portable above-ground storage tanks at UNLV have double-wall design with a secondary shell designed to contain 110 percent of the inner shell capacity. It is recommended that all portable tanks are stored within a fenced part of the operations and maintenance yard, protected from impact by bollards, with adequate security lighting; however, it may be used elsewhere on site. It is used to refuel various small pieces of equipment such as trucks and compressors that may be deployed at different areas on the site.
    - **Spill pallets.** It is recommended that spill pallets have a capacity of 75 gallons, this can effectively contain the volume of any single 55-gallon drum. Drums are not stored onsite and may be used in the future as a temporary storage mechanism for used sorbent materials during a spill. Any hazardous waste shall be processed according to Resource Recovery and Response Act (RCRA) and other environmental law.
- At the UNLV Motor Pool:

- **Rollover berm.** The UNLV Motor Pool at OM3 is proposed to be surrounded by a 6-inch rollover berm that provides sufficient containment for the largest compartment of the tank truck loading or unloading at the facility (5000 gallons), and an additional amount of freeboard for precipitation, based on the CCRFCD criteria for detention ponds, or the 2-yr, 6-hour storm.

- In transfer areas and other parts of the facility where a discharge could occur:

  - **Drip pans.** Fill ports for all ASTs should be equipped with drip pans to contain small leaks from the piping/hose connections.

  - **Sorbent material.** It is recommended that spill cleanup kits that include absorbent material, booms, and other portable barriers are located at strategic locations on the UNLV campus. The spill kits should be located within close proximity of the oil product storage and handling areas and the various facility tanks for rapid deployment should a spill occur. Sorbent material, and other portable barriers should be stored adjacent the Motor Pool area to allow for quick deployment in the event of a discharge during loading/unloading activities or any other accidental discharge outside the dike or loading rack/unloading area, such as from tank vehicles entering/leaving the facility or spills associated with the fuel dispenser. The recommended response equipment inventory for the facility is listed in Appendix J of this Plan. The inventory should be checked monthly to ensure that used material is replenished.

  - **Drainage system.** An oil/water interceptor should be located on the storm drain system immediately upstream of Maryland Parkway to intercept potential spills before reaching the offsite storm drain system. It is assumed that immediate response throughout campus with sorbent material will be used to intercept spills before reaching the storm drain system.

  - **Oil/water interceptor.** The oil/water interceptor should be installed on the storm drain system immediately upstream of Maryland Parkway. The oil/water interceptor has a total capacity for oil/water mixture of 2000 gallons. The oil/water interceptor should be inspected monthly as part of the scheduled inspection to check the level of water within the interceptor and measure the depth of bottom sludge and floating oils. Floating diesel fuel should be removed by a licensed waste collector.

3.5 BMP: Inspections, Tests, and Records

UNLV Risk Management and Safety Department should perform inspections, tests, and evaluations listed in the following table. Table 3-2 summarizes the various types of inspections and tests performed at the facility. The inspections and tests are described later in this section, and in the respective sections that describe different parts of the facility.

Table 3-2: Recommended Inspection and Testing Program

Facility Component	Action	Frequency/Circumstances
Above ground container	Test container integrity. Combine visual inspection with another testing technique (non-destructive shell testing). Inspect outside of container for signs of deterioration and discharges.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.
Container supports and foundation	Inspect container s supports and foundations.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.
Liquid level sensing devices (overfill)	Test for proper operation.	Monthly
Diked area	Inspect for signs of deterioration, discharges, or accumulation of oil inside diked areas.	Monthly
	Visually inspect content for presence of oil.	Prior to draining
Lowermost drain and all outlets of tank truck	Visually inspect.	Prior to filling and departure
All above ground valves, piping, and appurtenances	Assess general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.	Monthly
Buried metallic storage tank	Leak test.	Annually
Buried piping	Inspect for deterioration.	Whenever a section of buried line is exposed for any reason.
	Integrity and leak testing.	At the time of installation, modification, construction, relocation, or replacement.

3.5.1 Daily Inspection

No current daily inspection is warranted of the UNLV facilities. Inspections should be performed on a monthly basis, and preferably after major rain storm events throughout the year.

3.5.2 Monthly Inspection

The checklist provided in Appendix C is used for monthly inspections by UNLV Risk Management and Safety Department personnel. The monthly inspections should cover the following key elements:

- Observing the exterior of aboveground storage tanks, pipes, and other equipment for signs of deterioration, leaks, corrosion, and thinning.
- Observing the exterior of portable containers for signs of deterioration or leaks.
- Observing tank foundations and supports for signs of instability or excessive settlement.
- Observing the tank fill and discharge pipes for signs of poor connection that could cause a discharge, and tank vent for obstructions and proper operation.
- Verifying the proper functioning of overfill prevention systems.
- Checking the inventory of discharge response equipment and restocking as needed.
- Observing and measuring the quantity of accumulated oil within the oil/water interceptor.

All problems regarding tanks, piping, containment, or response equipment must immediately be reported to the Facility Manager. Visible oil leaks from tank walls, piping, or other components must be repaired as soon as possible to prevent a larger spill or a discharge to navigable waters or adjoining shorelines. Pooled oil must be removed immediately upon discovery.

Written monthly inspection records should be signed by the Facility Manager and maintained with the SPCC Plan for a period of three years.

3.5.3 Annual Inspection

Facility personnel should perform a more thorough inspection of facility equipment on an annual basis. This annual inspection complements the monthly inspection described above and is performed in June of each year using the checklist provided in Appendix C of this Plan.

The annual inspection is preferably performed after a large storm event in order to verify the imperviousness and/or proper functioning of drainage control systems such as the dike, rollover berm, control valves, and the oil/water interceptor.

Written annual inspection records are signed by the Facility Manager and maintained with the SPCC Plan for a period of three years.

3.6 BMP: Personnel, Training, and Dis charge Prevention Procedures

The Facility Manager is the facility designee and is responsible for oil discharge prevention, control, and response preparedness activities at this facility.

UNLV Risk Management and Safety Department management should develop instruction to oil-

handling facility personnel in the operation and maintenance of oil pollution prevention equipment, discharge procedure protocols, applicable pollution control laws, rules and regulations, general facility operations, and the content of the SPCC Plan. Any new facility personnel with oil-handling responsibilities should be provided with this same training prior to being involved in any oil operation.

Annual discharge prevention briefings should be held by the Facility Manager for all facility personnel involved in oil operations. The briefings should be aimed at ensuring continued understanding and adherence to the discharge prevention procedures presented in the SPCC Plan. The briefings should highlight and describe known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices. Facility operators and other personnel should have the opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

A simulation of an on-site vehicular discharge should be conducted, and future training exercises should be periodically held to prepare for possible discharge responses.

3.7 BMP: Tank Truck Loading/Unloading Rack Requirements

The potential for discharges during tank truck loading and unloading operations is of particular concern at this facility. UNLV Risk Management and Safety Department management is committed to ensuring the safe transfer of material to and from storage tanks. The following measures should be implemented to prevent oil discharges during tank truck loading and unloading operations.

3.7.1 Secondary Containment

The Motor Pool area should be surrounded with a 6-inch rollover asphalt berm that provides secondary containment in the event of a discharge during transfer operations. The secondary containment berm should be designed to address the more stringent rack containment requirements of the SPCC, which requires that the berm be sufficient to contain the capacity of the largest compartment, plus freeboard for precipitation. The curbed area should provide a catchment capacity of 5000 gallons, which is capable of containing the largest volume of the largest UST at the Motor Pool site.

To minimize direct exposure to rain, and facilitate the cleanup of small spills that may occur during loading/unloading operations, the Motor Pool area is partially covered by a roof.

The area should be graded to direct the flow of oil or water away from the vehicle, and the low point of the curbed area is fitted with a gate valve that is normally kept closed and locked. The key for that lock is kept in the main office. The berm should be drained by UNLV personnel after verifying that the retained water is free of oil. The accumulated water should be released to the onsite storm drain system and the oil/water interceptor. The drain valve should be closed and locked following drainage.

3.7.2 Loading/Unloading Procedures

All suppliers must meet the minimum requirements and regulations for tank truck loading/unloading established by the U.S. Department of Transportation. UNLV Risk Management and Safety Department ensures that the vendor understands the site layout, knows the protocol for entering the facility and unloading product, and has the necessary equipment to respond to a discharge from the vehicle or fuel delivery hose.

The Facility Manager or his/her designee supervises oil deliveries for all new suppliers, and periodically observes deliveries for existing, approved suppliers.

All loading and unloading of tank vehicles takes place only in the designated loading rack/unloading area.

Vehicle filling operations should be performed by facility personnel trained in proper discharge prevention procedures. The truck driver or facility personnel remain with the vehicle at all times while fuel is being transferred. Transfer operations are performed according to the minimum procedures outlined in Table 3-3. This table is also posted next to the loading/unloading point.

Table 3-3: Fuel Transfer Procedures

Stage	Tasks
Prior to loading/ unloading	• Visually check all hoses for leaks and wet spots. • Verify that sufficient volume (ullage) is available in the storage tank or truck. • Lock in the closed position all drainage valves of the secondary containment structure. • Secure the tank vehicle with wheel chocks and interlocks. • Ensure that the vehicle s parking brakes are set. • Verify proper alignment of valves and proper functioning of the pumping system. • If filling a tank truck, inspect the lowermost drain and all outlets. • Establish adequate bonding/grounding prior to connecting to the fuel transfer point. • Turn off cell phone.
During loading/ unloading	• Driver must stay with the vehicle at all times during loading/unloading activities. • Periodically inspect all systems, hoses and connections. • When loading, keep internal and external valves on the receiving tank open along with the pressure relief valves. • When making a connection, shut off the vehicle engine. When transferring Class 3 materials, shut off the vehicle engine unless it is used to operate a pump. • Maintain communication with the pumping and receiving stations. • Monitor the liquid level in the receiving tank to prevent overflow. • Monitor flow meters to determine rate of flow. • When topping off the tank, reduce flow rate to prevent overflow.
After loading/ unloading	• Make sure the transfer operation is completed. • Close all tank and loading valves before disconnecting. • Securely close all vehicle internal, external, and dome cover valves before disconnecting. • Secure all hatches. • Disconnect grounding/bonding wires. • Make sure the hoses are drained to remove the remaining oil before moving them away from the connection. Use a drip pan. • Cap the end of the hose and other connecting devices before moving them to prevent uncontrolled leakage. • Remove wheel chocks and interlocks. • Inspect the lowermost drain and all outlets on tank truck prior to departure. If necessary, tighten, adjust, or replace caps, valves, or other equipment to prevent oil leaking while in transit.

PART 4: Structural BMPs

4.1 Facility Drainage

Drainage from the UNLV campus is generally from west to east. An onsite storm drain intercepts storm flows and drains to Maryland Parkway. Potential releases of oil from most parts of campus generally do not have the potential to be captured by the storm drain system because of the distance of overland flow to the nearest drop inlet. The proposed location of the oil/water interceptor is designed to intercept diesel fuel from the Lied Library tank before being captured by the onsite storm drains system before reaching Maryland Parkway. The proposed oil/water interceptor downstream of Tank #10 at the Lied Library should intercept spills before reaching the drop inlet outside the block wall south of the tank location. Drainage events are recorded in the log included in this SWPPP Plan.

A proposed dike at OM3 should be restrained by a manually-operated gate valve to prevent a discharge from leaving the portable generator site. The gate valve should normally be sealed closed, except when draining the secondary containment structure. The content of the secondary containment dike is inspected by facility personnel prior to draining to ensure that only oil-free water is allowed to enter the facility storm water drainage system. The bypass valve should be opened and resealed under direct personnel supervision. Drainage events are recorded in the log included in this SWPPP Plan.

A proposed rollover berm at the Motor Pool is restrained by a manually-operated gate valve to prevent a discharge from leaving the Motor Pool site. The gate valve should normally be sealed closed, except when draining the secondary containment structure. The content of the secondary containment dike is inspected by facility personnel prior to draining to ensure that only oil-free water is allowed to enter the facility storm water drainage system. The bypass valve should be opened and resealed under direct personnel supervision. Drainage events are recorded in the log included in this SWPPP Plan.

Any potential discharge from ASTs should be restrained by secondary containment structures or sorbent material. Discharges at the Motor Pool occurring during loading/unloading operations should be restrained by the rollover berm. The Lied Library includes an oil/water interceptor which is used as containment for spill of the existing 2000 gallon tank. Discharges outside the Motor Pool, Lied Library area, or other areas, should be intercepted by other methods such as sorbent materials.

4.2 Bulk Storage Containers

Table 4-1 summarizes the construction, volume, and content of bulk storage containers at UNLV facility.

Table 4-1a: List of Oil Containers

Tank No	Location	Type (Construction Standard)	Capacity	Content	Discharge Prevention and Containment
1	ARC	AST with horizontal construction, diesel tank below generator	115 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
2	BEH	AST with horizontal construction, diesel tank below generator	300 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
3	BEH	AST with vertical construction, diesel tank	100 Gallons	Diesel	Secondary containment shell around primary tank, leak detection
4	BEH	AST with horizontal construction	~1100 Gallons	Diesel	Rectangular, concrete, secondary containment structure with relief valve at base
5	BHS	AST with vertical construction	100 Gallons	Diesel	Secondary containment shell around primary tank, with leak detection
6	BPB	AST with vertical construction	100 Gallons	Diesel	Secondary containment shell around primary tank, with leak detection
7	CBC	AST with horizontal construction, diesel tank below generator	1000 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
8	FND	AST with horizontal construction, diesel tank below generator	100 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
9	Greenspun	AST with horizontal construction, diesel tank below generator	1000 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
10	LLB	AST with horizontal construction	2000 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
11	LLB	AST with horizontal construction	300 Gallons	Red Dye	Secondary, rectangular, concrete containment structure with relief valve at base
12	LLB	AST with vertical construction	50 Gallons	Diesel Cooling Pump	Secondary containment shell around primary tank. Inside Lied Library utility room, also protected by curbing at doorway. Drain is plugged.
	LLB	Raised AST with horizontal construction,	2000 Gallons	Diesel Emergency	Secondary containment shell around primary tank. Inside Lied Library

13		on pipe supports, attached to tank		Generator	utility room, also protected by curbing at doorway. Drain is plugged.
14	MSM/HRC	AST with horizontal construction, diesel tank below generator	50 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
15	OM3	AST with horizontal construction, portable	100 Gallons	Diesel Portable Generator	No secondary containment
16	OM3	AST with horizontal construction on trailer, portable	500 Gallons+ 129 Gallons	Diesel Portable Generator	Dual wall construction with annular space, liquid level alarm
17	OM3	AST with horizontal construction, portable	? Gallons	Diesel Portable Light	No secondary containment
18	OM3	AST with horizontal construction, portable	41 Gallons	Diesel Portable Generator	No secondary containment
19	PSP	AST with horizontal construction, diesel tank below generator	85 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
20	SCS	AST with vertical construction	100 Gallons	Diesel	Secondary containment shell around primary tank, with leak detection
21	Science and Engineering Building	AST with horizontal construction, diesel tank below generator	------	Diesel Emergency Generator	Dual wall construction with annular space
22	TBE	AST with horizontal construction, diesel tank below generator	150 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
23	WHI	AST with horizontal construction, diesel tank below generator	500 Gallons	Diesel Emergency Generator	Dual wall construction with annular space, liquid level control and alarm
24	WHI	AST with horizontal construction, diesel tank below generator	300 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
25	WRI	AST with horizontal construction, diesel tank below generator	400 Gallons	Diesel Emergency Generator	Dual wall construction with annular space

Table 4-1b: List of Oil Containers

Tank No	Location	Type (Construction Standard)	Capacity	Content	Discharge Prevention and Containment
26	MSU	AST with horizontal construction, diesel tank below generator	366 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
27	TON	Raised AST with horizontal construction on pipe supports, attached to tanks	75 Gallons	Diesel for Fire Pump	Secondary containment is rectangular, concrete containment structure, inside building
28	TON	AST with horizontal construction, diesel tank below generator	366 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
29	KRH	AST with horizontal construction, diesel tank below generator	60 Gallons	Fire Pump	Dual wall construction with annular space
30	DAY	AST with horizontal construction, diesel tank below generator	500 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
31	RWC	AST with horizontal construction, diesel tank below generator	400 Gallons	Diesel Emergency Generator	Dual wall construction with annular space

Table 4-1c: List of Oil Containers

Tank No	Location	Type (Construction Standard)	Capacity	Content	Discharge Prevention and Containment
32	TMC	AST with horizontal construction, diesel tank below generator	500 Gallons	Diesel Emergency Generator	Dual wall construction with annular space
33	TMC	AST with vertical construction	100 Gallons	Diesel Emergency Generator	Leak detection, 4-inch metal curbing as secondary containment
34	COX	AST with horizontal construction, diesel tank below generator	380 Gallons	Diesel Emergency Generator	Dual wall construction with annular space

4.2.2 Secondary Containment

A dike should be provided around portable Tanks #15, 16, 17, and 18. Tanks #15, 16, and 18, have a 100-gallon, 629-gallon, and 41-gallon capacity, respectively. We were unable to determine the capacity of Tank #17. The dike has a total containment capacity of all the tanks combined and adequate additional volume to handle precipitation. The floor and walls of the containment dike should be constructed of poured concrete reinforced with steel. The concrete dike should be built under the supervision of a civil engineer and in conformance with his specifications to be impervious to oil for a period of 72 hours. The facility is unattended for a maximum of 40 hours (Saturday evening through Monday morning) and therefore any spill into the diked area would be detected before it could escape the diked area. The surface of the concrete floor, the inside and outside of the walls, and the interface of the floor and walls, should be visually inspected during the monthly facility inspection to detect any crack, signs of heaving or settlement, or other structural damage that could affect the ability of the dike to contain oil. Any damage is promptly corrected to prevent migration of oil into the ground, or out of the dike.

The 629-gallon portable AST tank is of double-wall construction and provides intrinsic secondary containment for 110 percent of the tank capacity. Since the secondary containment is not open to precipitation, this volume is sufficient to fully contain the product in the event of a leak from the primary container. The interstitial space between the primary and secondary containers is inspected on a monthly basis to detect any leak of product from the primary container. The container, however, is not equipped to prevent overfills as required by EPA policy in its memorandum on double-walled tanks. Therefore, general containment is required for potential tank overfills. This containment is accomplished through the facility drainage

system and the oil/water interceptor, which provide environmentally equivalent protection as described in Section 3.1 of this Plan.

The proposed location of the oil/water interceptor is designed to intercept diesel fuel from the Lied Library tank before being captured by the onsite storm drains system before reaching Maryland Parkway. The proposed oil/water interceptor downstream of Tank #10 at the Lied Library should intercept spills before reaching the drop inlet outside the block wall south of the tank location. Drainage events are recorded in the log included in Appendix D to this SWPPP Plan.

A rollover berm should be provided adjacent the Motor Pool at the Operation and Maintenance 3. The rollover berm should have a total containment capacity to allow sufficient volume for the 5000 gallon UST tank and freeboard for precipitation. The freeboard is sufficient to contain a rainfall corresponding to Section 1500 of the Clark County Regional Flood Control District s Hydrologic Criteria and Drainage Design Manual, as documented in Appendix F of this Plan. The rollover berm should be built under the supervision of a civil engineer and in conformance with his specifications to be impervious to oil for a period of 72 hours. The facility is unattended for a maximum of 40 hours (Saturday evening through Monday morning) and therefore any spill into the rollover berm area would be detected before it could escape the area. The rollover berm should be visually inspected during the monthly facility inspection to detect any cracks, signs of heaving or settlement, or other structural damage that could affect the ability of the rollover berm to contain oil. Any damage is promptly corrected to prevent migration of oil into the ground, or out of the rollover berm area.

USTs are of double-wall construction and provide intrinsic secondary containment for 110 percent of the tank capacity. The interstitial space between the primary and secondary containers is inspected on a monthly basis to detect any leak of product from the primary container 55-gallon drums are not being used to store petroleum products. Future 55-gallon drums should be placed on spill pallets. Each spill pallet should provide 75 gallons of containment capacity, which is more than the required 55 gallons for any single drum since the drums are not exposed to precipitation.

4.2.3 Drainage of Diked Areas

The concrete dikes should be drained under direct supervision of facility personnel. The accumulated water is observed for signs of oil prior to draining. The gate valves should be normally kept in a closed position and locked except when draining the dike. Dike drainage events are recorded on the form included in Appendix D of this Plan; records are maintained at the facility for at least three years.

Part 5: Discharge Response

This section describes the response and cleanup procedures in the event of an oil discharge. The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state

and possibly federal laws. Immediate action must be taken to control, contain, and recover discharged product.

In general, the following steps should be taken:

- Eliminate potential spark sources;
- If possible and safe to do so, identify and shut down source of the discharge to stop the flow;
- Contain the discharge with sorbents, berms, fences, trenches, sandbags, or other material;
- Contact the Facility Manager or his/her alternate;
- Contact regulatory authorities and the response organization; and
- Collect and dispose of recovered products according to regulation.

For the purpose of establishing appropriate response procedures, this SWPPP Plan classifies discharges as either minor or major, depending on the volume and characteristics of the material released.

A list of Emergency Contacts is provided in Appendix H. The list should be posted at prominent locations throughout the facility. A list of discharge response material kept at the facility is included in Appendix J.

5.1 Response to a Min or Discharge

A minor discharge is defined as one that poses no significant harm (or threat) to human health and safety or to the environment. Minor discharges are generally those where:

- The quantity of product discharged is small (e.g., may involve less than 25 gallons of oil);
- Discharged material is easily stopped and controlled at the time of the discharge;
- Discharge is localized near the source;
- Discharged material is not likely to reach water;
- There is little risk to human health or safety; and
- There is little risk of fire or explosion.

Minor discharges can usually be cleaned up by UNLV Risk Management and Safety Department personnel. The following guidelines apply:

- Immediately notify the Facility Manager.
- Under the direction of the Facility Manager, contain the discharge with discharge response materials and equipment. Place discharge debris in properly labeled waste containers.
- The Facility Manager will complete the discharge notification form (Appendix I) and attach a copy to this SWPPP Plan.
- If the discharge involves more than 25 gallons of oil, the Facility Manager will call the Nevada Division of Environmental Protection (NDEP)

5.2 Response to a Major Discharge

A major discharge is defined as one that cannot be safely controlled or cleaned up by facility personnel, such as when:

- The discharge is large enough to spread beyond the immediate discharge area;
- The discharged material enters the onsite storm drain system;
- The discharge requires special equipment or training to clean up;
- The discharged material poses a hazard to human health or safety; or
- There is a danger of fire or explosion.

In the event of a major discharge, the following guidelines apply:

- All workers must immediately evacuate the discharge site via the designated exit routes and move to the designated staging areas at a safe distance from the discharge. Exit routes are included on the facility diagram and posted in the maintenance building, in the office building, and on the outside wall of the outside shed that contains the spill response equipment.
- If the Facility Manager is not present at the facility, the senior on-site person notifies the Facility Manager of the discharge and has authority to initiate notification and response. Certain notifications are dependent on the circumstances and type of discharge. For example, if oil reaches a sanitary sewer, the publicly owned treatment works (POTW) should be notified immediately. A discharge that threatens Flamingo Wash may require immediate notification to downstream users such as the Clark County Regional Flood Control District. The Facility Manager (or senior on-site person) must call for medical assistance if workers are injured.
- The Facility Manager (or senior on-site person) must notify the Fire Department or Police Department.
- The Facility Manager (or senior on-site person) must call the spill response and cleanup contractors listed in the Emergency Contacts list in Appendix H.
- The Facility Manager (or senior on-site person) must immediately contact the Nevada Division of Environmental Protection and the National Response Center (1-800-424-8802).

- The Facility Manager (or senior on-site person) must record the call on the Discharge Notification form in Appendix I and attach a copy to this SWPPP Plan.
- The Facility Manager (or senior on-site person) coordinates cleanup and obtains assistance from a cleanup contractor or other response organization as necessary.

If the Facility Manager is not available at the time of the discharge, then the next highest person in seniority assumes responsibility for coordinating response activities.

5.3 Waste Disposal

Wastes resulting from a minor discharge response should be containerized in impervious bags, drums, or buckets. The facility manager should characterize the waste for proper disposal and ensure that it is removed from the facility by a licensed waste hauler within two weeks.

Wastes resulting from a major discharge response should be removed and disposed of by a cleanup contractor.

5.4 Discharge Notification

Any size discharge (i.e., one that creates a sheen, emulsion, or sludge) that affects or threatens to affect navigable waters or adjoining shorelines must be reported immediately to the National Response Center (1-800-424-8802). The Center is staffed 24 hours a day.

A summary sheet is included in Appendix I to facilitate reporting. The person reporting the discharge must provide the following information:

- Name, location, organization, and telephone number
- Name and address of the party responsible for the incident
- Date and time of the incident
- Location of the incident
- Source and cause of the release or discharge
- Types of material(s) released or discharged
- Quantity of materials released or discharged
- Danger or threat posed by the release or discharge
- Number and types of injuries (if any)
- Media affected or threatened by the discharge (i.e., water, land, air)
- Weather conditions at the incident location
- Any other information that may help emergency personnel respond to the incident

Contact information for reporting a discharge to the appropriate authorities is listed in Appendix H and is also posted in prominent locations throughout the facility (e.g., in the office building, in the maintenance building, and at the loading rack/unloading area).

In addition to the above reporting, the SPCC requires that information be submitted to the United States Environmental Protection Agency (EPA) Regional Administrator and the appropriate state agency in charge of oil pollution control activities (see contact information in Appendix H) whenever the facility discharges. The following information must be submitted to the EPA Regional Administrator and to NDEP within 60 days:

- Name of the facility;
- Name of the owner/operator;
- Location of the facility;
- Maximum storage or handling capacity and normal daily throughput;
- Corrective action and countermeasures taken, including a description of equipment repairs and replacements;
- Description of facility, including maps, flow diagrams, and topographical maps;
- Cause of the discharge(s) to navigable waters and adjoining shorelines, including a failure analysis of the system and subsystem in which the failure occurred;
- Additional preventive measures taken or contemplated to minimize possibility of recurrence; and
- Other pertinent information requested by the Regional Administrator.

A standard report for submitting the information to the EPA Regional Administrator and to NDEP is included in Appendix K of this Plan.

5.5 Cleanup Contractors and Equipment Suppliers

Contact information for specialized spill response and cleanup contractors is provided in Appendix H. These contractors have the necessary equipment to respond to a discharge of oil that affects drainage to the onsite storm drain that ultimately drains toward Flamingo Wash. Spill kits should be located at various locations around the UNLV campus. The inventory of response supplies and equipment is provided in Appendix J of this Plan. The inventory is verified on a monthly basis. Additional supplies and equipment may be ordered from the following sources:

H2O Environmental	(702) 396-4148

Appendix A
Site Plan and Facility Diagram

Figure A-1: Site Plan.

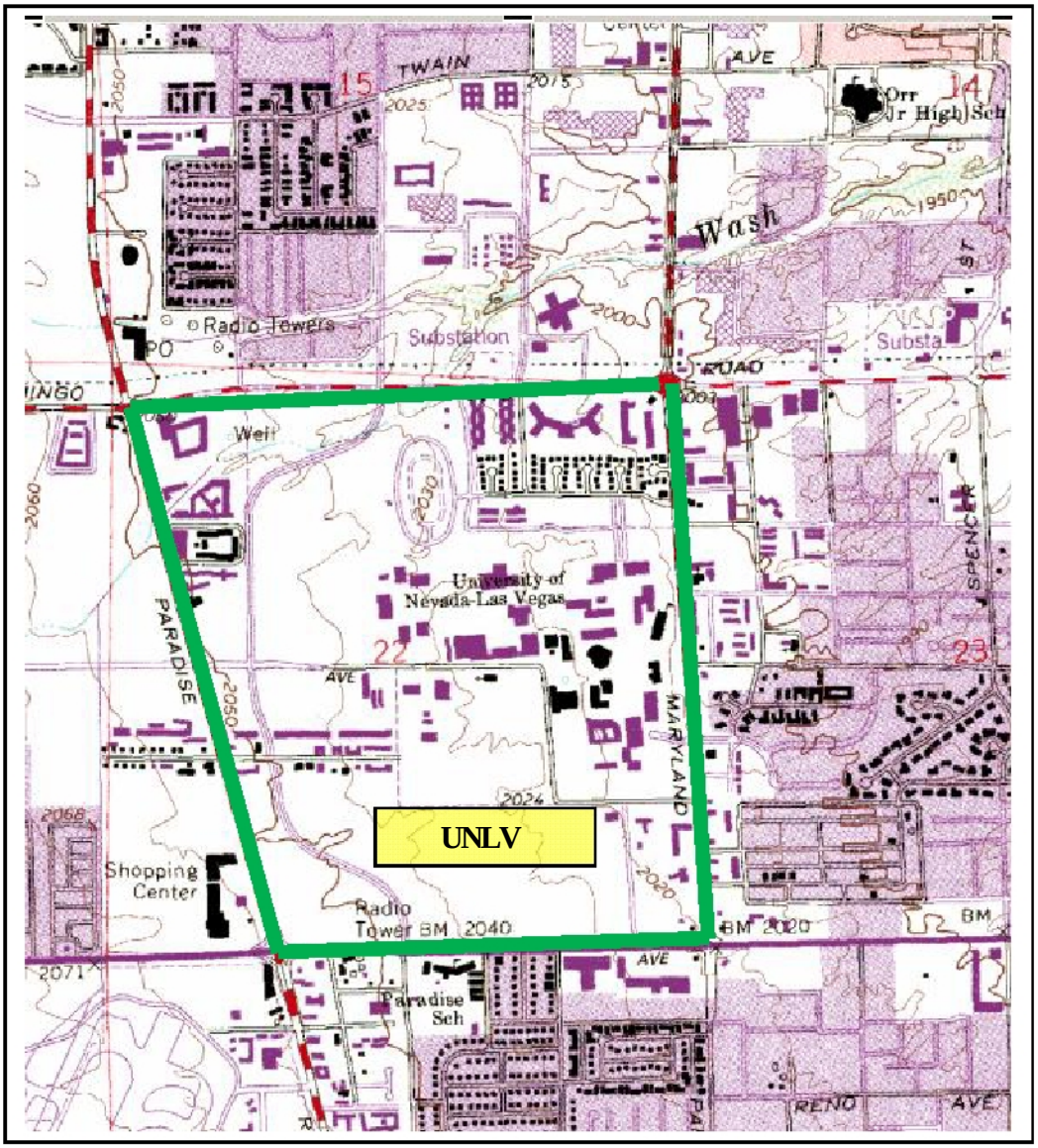
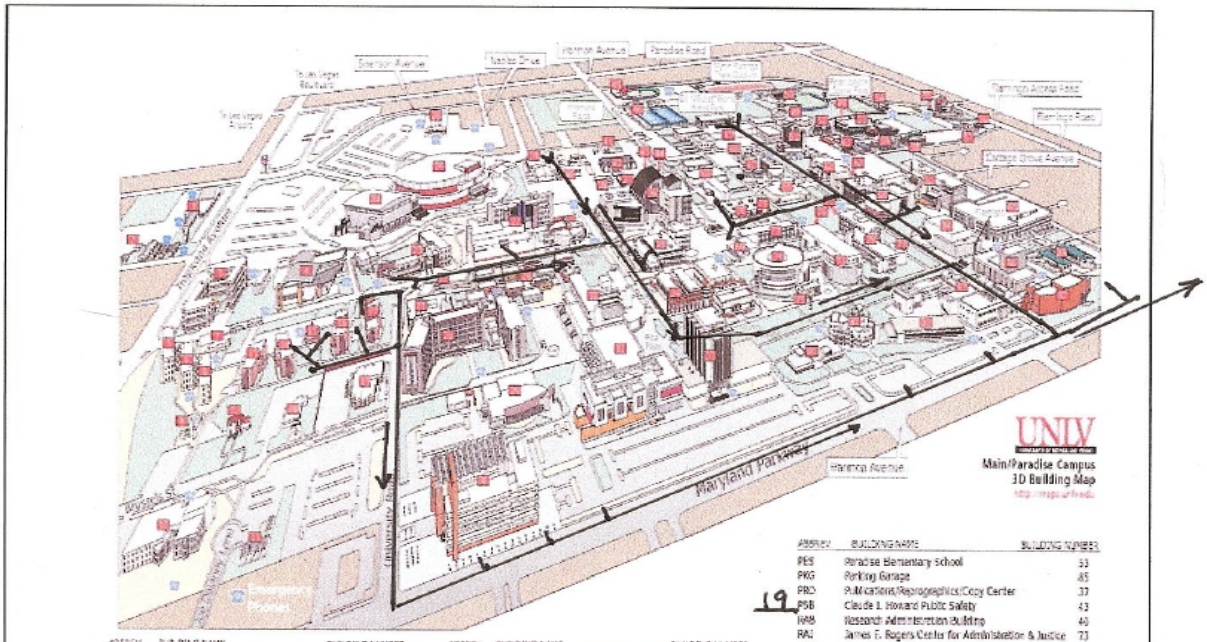


Figure A-2: Facility and Drainage Map.

Figure A-2: Facility Map.

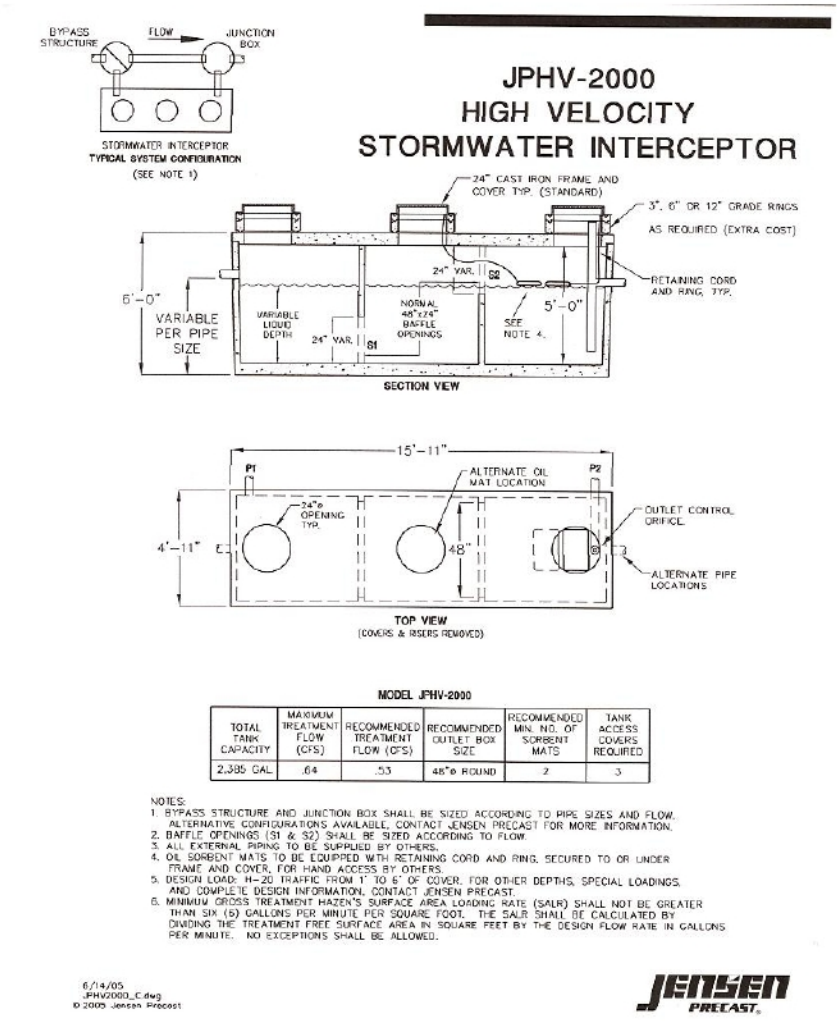


	ABBREV	BUILDING NAME	BUILDING NUMBER
1	ARC	Paul B. Sogg Architecture Building	10
	BDC	Beasley Professional Development Center	52
2,3,4	BEH	Frank and Estella Beam Hall	32
	BGC	John D. "Jackie" Vaughan Boys and Girls Club	58
5	BHS	Rod Lee Bigelow Health Sciences	51
	BKS	Bookstore	29
	BMC	Lee and Thomas Beam Music Center	87
6	BPS	Robert L. Bigelow Physics	67
	BSL	William S. Boyd School of Law	74
	BWG	Boeing Gymnasium	49
7	CBC	Carol C. Harter Classroom Building Complex	27
	CDC	Central Desert Complex	28
	CEB	William D. Carlson Education	78
	CEB-HEA	Hobart H. Hendrix Education Auditorium	79
	CET	Carlson Education Trailer	76
34	CHE	Chemistry	65
	COX	Cox Pavilion	24
	CSB	Campus Services Building	26
	CWH	Claudine Williams Residence Hall	5
30	DAY	Dayton Complex	3
	DIN	Hazel H. Wilson Dining Commons	21
	EMS	Elder Media Softball Stadium	45
	EPA	Environmental Protection Agency	68
	FDH	Flora Dungan Humanities	33
	FMA	Facilities Management Administration	41
8	FND	Foundations Building	86
	FRA	Maude Frazier Hall	80
	FTC	Frank and Vicki Fertitta Tennis Complex	46
	GRA	Archie C. Grant Hall	82
9	GRE	Greenspun Hall *	30
	HAB	Residential Life Housing Administration Building	7
	HCH	Artemus W. Ham Concert Hall	64
	HFA	Alta Ham Fine Arts	83
	HDJ	Howard S. Wright Building	12
	HHH	Hitzick Johnny Hughes Hall - Building A	17
	HRB	Reynolds Westfall Building	42
	IGI	Stan Fulton Building - International Gaming Institute	55
	ISC	Interfaith Student Center	18
	JBT	Judy Bayley Theatre	66
29	KRH	Kitty Redman Residence Hall	8
	LAC	Lied Athletic Complex	48
	LBC	Lynn Bennett Early Childhood Development Center	63
	LDS	LDS Institute of Religion Student Center	19
	LFG	Lilly Fong Geoscience	72
9,11 12,13	LLB	Lied Library	36
	MFH	Margie and Robert Falman Residence Hall - Building D	13
	MPE	Paul McDermott Physical Education	47
	MSS	Robert Miller Soccer Building	54
14 26	MSM/MRC	Marjorie Barrick Museum and Henry Rael Center	35
	MSU	Student Union	31
	NTS	North Trailer Site	56
15, 16	OSH	Operations and Maintenance	39
17, 18	PAR	Paradise Campus	1
	PCT	Paradise Campus Trailers	2
	PES	Paradise Elementary School	53
	PKG	Parking Garage	85
	PRO	Publications/Reprographics/Copy Center	37
19	PSB	Claude I. Howard Public Safety	43
	RAB	Research Administration Building	40
	RAJ	James E. Rogers Center for Administration & Justice	73
	RHB	Gym Road Residence Hall - Building B	16
	RHC	Gym Road Residence Hall - Building C	14
	RHP	Gym Road South Resident Services Building	9
	RPL	Radiation Protection Laboratory	70
31	RRC	Rebel Recycling Center	57
20	RWC	Student Recreation and Wellness Center	4
21	SCS	System Computing Services	69
	SEB	Science and Engineering Building *	61
	SHS	Claude I. Howard Student Health Services	22
	SSC	Student Services Complex *	23
	STS	South Trailer Site	11
	SWC	Sidewalk Café	77
	TAC	Richard Tam Alumni Center	81
	TAY	William D. Taylor Hall	36
22	TBE	Thomas T. Beam Engineering Complex	60
	TEC	Technology Building	71
32,33	TMA	Thomas & Mack Pool Court	75
27,28	TMC	Thomas & Mack Center	25
	TOH	Tonopah Residence Complex	20
	TTL	Temporary Teaching Labs	66
	UHB	University Hall	44
	USB	University Systems Building	38
	WBH	William S. Boyd Residence Hall	6
23,24	WBS	Earl E. Wilson Baseball Stadium	90
	WHC	Juanita Greer White Life Sciences	64
	WHT	White Hall Trailers	62
25	WNJ	John S. Wright Hall	24
	WRL	Eugene B. Warner Residential Life Building	15

Main Campus: 4505 S. Maryland Pkwy. Las Vegas, NV 89154 Paradise Campus: 851 E. Tropicana Ave. Las Vegas, NV 89119 * = currently under construction

APPENDIX B
Calculation of Secondary Containment Capacity

The following oil/water interceptor is recommended to be installed in the storm drain system immediately downstream of the Lied Library. This interceptor is designed for 2000 gallons, the same volume as the Lied Library 2000 gallon tank. This design is merely conceptual and is not a final design.



MODEL JPHV-2000

TOTAL TANK CAPACITY	MAXIMUM TREATMENT FLOW (CFS)	RECOMMENDED TREATMENT FLOW (CFS)	RECOMMENDED OUTLET BOX SIZE	RECOMMENDED MIN. NO. OF SORBENT MATS	TANK ACCESS COVERS REQUIRED
2,385 GAL	.64	.53	48"ø ROUND	2	3

NOTES:
1. BYPASS STRUCTURE AND JUNCTION BOX SHALL BE SIZED ACCORDING TO PIPE SIZES AND FLOW. ALTERNATIVE CONFIGURATIONS AVAILABLE, CONTACT JENSEN PRECAST FOR MORE INFORMATION.
2. BAFFLE OPENINGS (S1 & S2) SHALL BE SIZED ACCORDING TO FLOW.
3. ALL EXTERNAL PIPING TO BE SUPPLIED BY OTHERS.
4. OIL SORBENT MATS TO BE EQUIPPED WITH RETAINING CORD AND RING, SECURED TO OR UNDER FRAME AND COVER, FOR HAND ACCESS BY OTHERS.
5. DESIGN LOAD: H-20 TRAFFIC FROM 1' TO 6' OF COVER. FOR OTHER DEPTHS, SPECIAL LOADINGS, AND COMPLETE DESIGN INFORMATION, CONTACT JENSEN PRECAST.
6. MINIMUM GROSS TREATMENT HAZEN'S SURFACE AREA LOADING RATE (SALR) SHALL NOT BE GREATER THAN SIX (6) GALLONS PER MINUTE PER SQUARE FOOT. THE SALR SHALL BE CALCULATED BY DIVIDING THE TREATMENT FREE SURFACE AREA IN SQUARE FEET BY THE DESIGN FLOW RATE IN GALLONS PER MINUTE. NO EXCEPTIONS SHALL BE ALLOWED.

6/14/05
JPHV2000_C.dwg

JENSEN PRECAST

For the UNLV Motor Pool area:

The conceptual design calls for a 6-inch rollover curb that is at least 45 feet by 45 feet in dimension. This will allow 1-inch of freeboard, should contain a 5000 gallon spill, and contain the 2-yr, 6-hour storm of 0.72 inches. The following is a conceptual size of a gate that could be used to drain the Motor Pool area.

UNLV Motor Pool

Project Description

Solve For	Headwater Elevation

Input Data

Discharge	0.50	ft^3/s
Crest Elevation	0.00	ft.
Weir Coefficient	3.00	US
Crest Length	1.00	ft.

Results

Headwater Elevation	0.30	ft.
Headwater Height Above Crest	0.30	ft.
Flow Area	0.30	ft^2
Velocity	1.65	ft/s
Wetted Perimeter	1.61	ft.
Top Width	1.00	ft.

For the OM3 Area:

The conceptual design calls for a 4-inch dike that is at least large enough to contain the single walled tanks. This will allow 1-inch of freeboard, should contain a 500 gallon spill, and contain the 2-yr, 6-hour storm of 0.72 inches. The following is a conceptual size of a gate that could be used to drain the OM3 Pool area.

UNLV OM3

Project Description

Solve For	Headwater Elevation

Input Data

Discharge	0.33	ft^3/s
Crest Elevation	0.00	ft.
Weir Coefficient	3.00	US
Crest Length	1.00	ft.

Results

Headwater Elevation	0.23	ft.
Headwater Height Above Crest	0.23	ft.
Flow Area	0.23	ft^2
Velocity	1.44	ft./s
Wetted Perimeter	1.46	ft.
Top Width	1.00	ft.

APPENDIX C
Discharge Notification For m

Part A: Discharge Information	
General information when reporting a spill to outside authorities: Name: UNLV Address: Telephone: Owner/Operator: Primary Contact:	
Type of oil:	Discharge Date and Time:
Quantity released:	Discovery Date and Time:
Quantity released to a waterbody:	Discharge Duration:
Location/Source:	
Actions taken to stop, remove, and mitigate impacts of the discharge:	
Affected media: G air G water G soil	G storm water sewer/POTW G dike/berm/oil-water interceptor G other: _____
Notification person:	Telephone contact: Business: 24-hr:
Nature of discharges, environmental/health effects, and damages: Injuries, fatalities or evacuation required?	

Part B: Notification Checklist		
	Date and time	Name of person receiving call
Discharge in any amount		
Discharge in amount exceeding 10 gallons and *not affecting a waterbody or groundwater*		

Discharge in any amount and affecting (or threatening to affect) a waterbody		
National Response Center (800) 424-8802		

* The POTW should be notified of a discharge only if oil has reached or threatens sewer drains that connect to the POTW collection system.

APPENDIX D
Discharge Response Equipment Inventory

The discharge response equipment inventory is verified during the monthly inspection and must be replenished as needed.

At various locations to be determined

o	Empty 55-gallons drums to hold contaminated material	4
o	Loose absorbent material	200 pounds
o	Absorbent pads	3 boxes
o	Nitrile gloves	6 pairs
o	Neoprene gloves	6 pairs
o	Vinyl/PVC pull-on over boots	6 pairs
o	Non-sparking shovels	3
	Brooms	3
	Drain seals or mats	2
o	Sand bags	12

APPENDIX E
Agency Notification Standard Report

Information contained in this report, and any supporting documentation, must be submitted to the EPA Region 1 Regional Administrator, and to MADEP, within 60 days of the qualifying discharge incident.

Facility:	*UNLV*
Owner/operator:	
Name of person filing report:	
Location:	
Maximum storage capacity:	
Daily throughput:	
Nature of qualifying incident(s): G Discharge to navigable waters or adjoining shorelines exceeding 1,000 gallons G Second discharge exceeding 42 gallons within a 12-month period.	
Description of facility (attach maps, flow diagrams, and topographical maps):	

Agency Notification Standard Report (cont.)
Cause of the discharge(s), including a failure analysis of the system and subsystems in which the failure occurred:
Corrective actions and countermeasures taken, including a description of equipment repairs and replacements:
Additional preventive measures taken or contemplated to minimize possibility of recurrence:
Other pertinent information: