September 13, 2017

Mr. Chemanji (Che) Shu-Nyamboli
Environmental Health Manager
University of New Mexico
Department of Safety & Risk Services (SRS)
MSC07 4100
1 University of New Mexico
Albuquerque, NM 87131-0001

Re: Illicit Discharge Detection and Elimination (IDDE) Program Plan

Dear Mr. Shu-Nyamboli

Daniel B. Stephens & Associates, Inc. (DBS&A) is pleased to provide the University of New Mexico (UNM) Environmental Health Division of the Department of Safety and Risk Services (SRS) the enclosed the September 2017 illicit discharge detection and elimination (IDDE) plan. Under the final watershed-based municipal separate storm sewer system (MS4) permit NMR04A000 issued by the U.S. Environmental Protection Agency [EPA] in December 2014, UNM is required to implement and enforce an IDDE program to systematically detect and eliminate illicit discharges entering the MS4, and to implement defined procedures to prevent illicit connections and illegal dumping into the MS4. The goal of the IDDE program is to find and eliminate non-stormwater discharges that are sources of pollution harmful to the Rio Grande habitat.

This plan is intended to assist SRS staff in implementing the IDDE program. It is a guidance document for SRS staff for activities related to IDDE. This document can also be used as a training tool to ensure that all staff members follow the same procedures in responding to illicit discharge concerns.

DBS&A appreciates the opportunity to assist UNM with this important work. If you have additional questions, or wish to discuss adding additional IDDE program implementation tasks, please feel free to contact us directly at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Chad Johannesen
Project Manager

John R. Bunch, P.G.
Senior Scientist

CJ/rpf
Enclosure

University of New Mexico
Illicit Discharge Detection and Elimination Plan

Prepared for **University of New Mexico**

September 13, 2017

THE UNIVERSITY of NEW MEXICO

Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109

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Illicit Discharge Detection and Elimination Plan

1. Introduction

This illicit discharge detection and elimination (IDDE) plan has been prepared for the University of New Mexico (UNM) Environmental Health Division of the Department of Safety and Risk Services (SRS) by Daniel B. Stephens & Associates, Inc. (DBS&A) to support UNM's IDDE program. The goal of the IDDE program is to find and eliminate non-stormwater discharges that are sources of pollution harmful to the Rio Grande habitat.

Under UNM's previous municipal separate storm sewer system (MS4) permit (NMS000101, issued by the U.S. Environmental Protection Agency [EPA] in May 2012) as described in Part I.C.5.e, UNM was required to implement and enforce an IDDE program to systematically detect and eliminate illicit discharges entering the MS4, and to implement defined procedures to prevent illicit connections and illegal dumping into the MS4. In December 2014, EPA released the final watershed-based MS4 permit NMR04A000, which requires the co-permittees to continue and update their existing IDDE programs. UNM's IDDE program is managed by the SRS.

This plan is intended to assist SRS staff in implementing the IDDE program. It is a guidance document for SRS staff for activities related to IDDE. This document can also be used as a training tool to ensure that all staff members follow the same procedures in responding to illicit discharge concerns.

2. Permit Requirements

Part I.D.5.e (i)(c) of watershed-based National Pollutant Discharge Elimination System (NPDES) Permit No. NMR04A000 requires the co-permittees to "develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to the MS4." As part of the plan, procedures need to be developed to determine priority areas where illicit discharges may be likely; these procedures include visual screening of outfalls during dry weather.

The primary permit requirements for the IDDE plan include the following:

- Procedures for locating priority areas likely to have illicit discharges, including field tests for selected pollutant indicators (biochemical oxygen demand [BOD], sediment [total suspended solids (TSS)], E. coli, oil and grease, nutrients, ammonia, potassium, and surfactants). The analytical suite may be adjusted based on visual observation (e.g., sheen, suds/foam, dirt, color, and smell) and visually screening outfalls during dry weather.
- Procedures for enforcement, including enforcement escalation procedures for recalcitrant or repeat offenders.
- Procedures for removing the source of the discharge.
- Procedures for program evaluation and assessment.
- Procedures for coordination with adjacent municipalities and/or state, tribal, or federal regulatory agencies to address situations where investigations indicate that the illicit discharge originates outside the MS4 jurisdiction.

The permit requires that the entire jurisdiction of the entity be screened at least once every 5 years, and once a year for areas identified as high priority. As defined by the permit, high priority areas include "any area where there is ongoing evidence of illicit discharges or dumping, or where there are citizen complaints on more than (5) separate events within twelve (12) months."

2.1 What Is Illicit Discharge?

Illicit discharge is defined by the Permit as ". . . any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities." Examples of illicit discharges are summarized in Table 1.

Table 1. Potential Sources of Illicit Discharges

Land Use	Generating Site	Activity that Produces Discharge
Residential	• Apartments • Multi-family • Single-family detached	• Car washing • Driveway cleaning • Dumping/spills (e.g., leaf litter and RV/boat holding tank effluent) • Equipment washdown • Lawn/landscape watering • Septic system maintenance • Swimming pool discharges
Commercial	• Campgrounds/RV parks • Car dealers/rental car companies • Car washes • Commercial laundry/dry cleaning • Gas stations/auto repair shops • Marinas • Nurseries and garden centers • Oil change shops • Restaurants • Swimming pools	• Building maintenance (power washing) • Dumping/spills • Landscaping/grounds care (irrigation) • Outdoor fluid storage • Parking lot maintenance (power washing) • Vehicle fueling • Vehicle maintenance/repair • Vehicle washing • Washdown of greasy equipment and grease traps • All commercial activities
Industrial	• Auto recyclers • Beverages and brewing • Construction vehicle washouts • Distribution centers • Food processing • Garbage truck washouts • Marinas, boat building and repair • Metal plating operations • Paper and wood products • Petroleum storage and refining • Printing	• Industrial process water or rinse water • Loading and unloading area washdown • Outdoor material storage (fluids)
Institutional	• Cemeteries • Churches • Corporate campuses • Hospitals • Schools and universities	• Building maintenance (e.g., power washing) • Dumping/spills • Landscaping/grounds care (irrigation) • Parking lot maintenance (power washing) • Vehicle washing
Municipal	• Airports • Landfills • Maintenance depots • Municipal fleet storage areas • Ports • Public works yards • Streets and highways	• Building maintenance (power washing) • Dumping/spills • Landscaping/grounds care (irrigation) • Outdoor fluid storage • Parking lot maintenance (power washing) • Road maintenance • Spill prevention/response • Vehicle fueling • Vehicle maintenance/repair • Vehicle washing

Source: Brown et al., 2004

2.2 What Is Illicit Connection?

Illicit connection is defined by the permit as ". . . any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer." Some examples of illicit connections include the following:

- Sanitary sewer piping connected directly from a building to the storm sewer system
- A basement or shop floor drain that is connected to the storm sewer system
- A cross connection between the municipal sanitary sewer and the storm sewer system

2.3 Authorized Non-Stormwater Discharges

The permit (U.S. EPA, 2014) includes a description of authorized non-stormwater discharges, including the following:

- Potable water sources, including routine water line flushing
- Lawn, landscape, and other irrigation waters provided all pesticides, herbicides, and fertilizers have been applied in accordance with approved manufacturing labeling and any applicable permits for discharges associated with pesticide, herbicide, and fertilizer application
- Diverted streamflows
- Rising groundwater
- Uncontaminated groundwater infiltration (as defined at 40 cfr §35.2005 (20))
- Uncontaminated pumped groundwater
- Foundation and footing drains
- Air conditioning or compressor condensate
- Springs
- Water from crawl space pumps

- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges
- Street wash waters that do not contain detergents and where no unremediated spills or leaks of toxic or hazardous materials have occurred
- Discharges or flows from firefighting activities (does not include discharges from firefighting training activities)
- Other similar occasional incidental non-stormwater discharges (e.g., non-commercial or charity car washes, etc.)

These discharges are not considered illicit, and therefore do not need to be addressed in the IDDE program.

2.4 University of New Mexico Storm Sewer System Map

DBS&A has developed maps of the storm drainage system at UNM (Figures 1a, 1b, and 1c) showing the stormwater outfalls. UNM is responsible for stormwater controls on its campuses, but not outside of its campuses. Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) and the City of Albuquerque (COA) share a common responsibility for the operation of the UNM flood control and stormwater quality system, as these co-permittees' areas of responsibility have large areas of overlap. AMAFCA and COA have primary responsibility of different channels and arroyos in the Albuquerque MS4 area. UNM does not discharge directly into the Rio Grande. Rather, stormwater runoff from the Albuquerque UNM campuses discharges into COA and AMAFCA storm drain systems. Additionally, UNM has developed land west of University Blvd. NE, north of Lomas Blvd. NE, west of Interstate 40 (I-40), and south of Indian School Road NE (a.k.a. "Lands West"). The outfall for Lands West is Odelia Pond, a stormwater detention facility owned, operated, and maintained by COA.

3. Illicit Discharge Detection Procedures

Illicit discharges and connections are identified through citizen reporting, interdepartmental referral, or other routine MS4 inspection activities. UNM relies on students, faculty, staff, local citizens, and inspections to detect potential problem areas quickly so that they can be addressed before they cause significant water quality degradation.

3.1 Illicit Discharge Reporting and Documentation

Illicit discharges or illegal storm drain dumping can be reported to SRS via telephone (505-277-2753) or online (http://iservicedesk.unm.edu/srs_home.html). This system encourages students, faculty, staff, and local citizens to participate in the reporting process and gives SRS information about problems like illegal dumping, spills, or strong odors. Additionally, UNM's related MS4 maintenance activities provide opportunities to document and identify potential problems. According to the SRS, there is no record of a reported illicit discharge at the facility as of December 2016.

When water quality incident reports are received, the information will be entered into a database maintained by SRS. The database will include information such as the date, location, and nature of the incident, as well as any action taken to address the issue. An illicit discharge incident report form (Appendix A) can also be used by SRS staff receiving the information before it is entered into the illicit discharge tracking database.

Once recorded, incident information should be referred to the appropriate SRS staff person for follow-up. The permit requires that suspected significant or severe illicit discharges be investigated within 48 hours of detection, and that all other discharges be investigated as soon as practicable. IDDE problems should be referred to SRS for further investigation as needed. SRS staff or a contractor will follow the investigation procedures in Section 4 to identify the source of the problem; if the source is known, the corrective action procedures outlined in Section 5 will apply.

3.2 Outfall Inspections

Visual inspections of outfalls in UNM's stormwater drainage system can identify areas of obvious pollution or non-stormwater discharges. Potential problem discharges can be identified by outfalls that are flowing during dry weather (potential illicit connection) or discharges that have high turbidity, strong odors, or unusual colors.

UNM does not discharge directly into the Rio Grande. Rather, stormwater runoff from the Albuquerque UNM campuses discharges into COA and AMAFCA storm drain systems. Within UNM's stormwater drainage system, there are 6 outfalls that drain into COA and AMAFCA storm drain systems. Outfall locations are shown on Figures 1a, 1b, and 1c.

The timing of outfall screening is important to consider when scheduling field days. Given the arid climate of this region, outfall inspections can be conducted during the wet or dry seasons, and should have an antecedent dry period of at least 72 hours after a rain event greater than 0.1 inch in magnitude.

Potential problems are indicated by outfalls that are flowing in dry weather and/or foul odors or discolored water in or around the outfall pipe. If an outfall with significant flow is encountered, field crews should attempt to determine the source of the flow. Groundwater should be eliminated as a potential source of the flow, if possible. When illicit discharge problems are identified, field crews should collect photographs of the issue and conduct a visual inspection of the surrounding area to identify any obvious pollution sources.

If inspection staff encounter an illicit discharge during inspection activities, the problem should be immediately referred to the appropriate personnel or response contractor for sampling. Samples should be collected and analyzed for selected pollutant indicators including BOD, sediment (TSS), E. coli, oil and grease, nutrients, ammonia, potassium, and surfactants, as well as field parameters including pH, electrical conductivity, temperature, and dissolved oxygen (DO). Field staff should also note any color associated with the discharge in the field notes. The analytical suite may be adjusted based on observation (e.g., sheen, suds/foam, dirt, color, and smell). Sampling will consist of collecting a minimum of 4 grab samples spaced at a

minimum interval of 15 minutes. Grab samples will be combined into a single composite sample.

The field observations will be logged in the inspection report. Staff should also complete an illicit discharge incident report form (Appendix A).

During field inspections, crews should also note whether the outfalls have maintenance issues, such as trash around the outfall or damaged infrastructure that should be brought to the attention of the UNM Physical Plant. Any observed spills or environmental hazards should be immediately reported to the SRS office (505-277-2753) or to the on-call SRS Duty Officer. The SRS website (http://srs.unm.edu/environmental-affairs/stormwater.php) provides a pager number for the on-call SRS Duty Officer. The incident should be documented using the illicit discharge incident report form (Appendix A). The SRS office will work with UNM staff or a designated contractor to clean up and properly dispose of the spilled material.

4. Investigation Procedures

Potential illicit discharge problems can be found through outfall inspections or reports from staff or the public as described in Section 3.1. When a complaint is reported, the permit requires that suspected significant or severe illicit discharges be investigated within 48 hours of detection, and that all other discharges be investigated as soon as practicable. The follow-up investigation could include a site visit to look at the problem area, review of mapping information, review of past complaints or investigations at the location, or other data collection and review. Once a problem has been verified (either through an outfall inspection, site inspection, or follow-up to a reported complaint), SRS will begin an illicit discharge investigation following the procedures outlined in this section.

4.1 Inspection and Sampling Procedures

During a dry weather inspection, observed flows are considered non-stormwater related. The flow may or may not be the result of an illicit discharge. Also, the absence of a flow does not indicate the absence of an illicit discharge, as these discharges can be intermittent or transitory.

Observations should be made and recorded during the dry weather inspection to determine if an intermittent or transitory pollution problem has occurred.

During dry weather field inspections, physical parameters including flow, odor, color, turbidity, and presence or absence of floatables will be documented. This information can be helpful in determining possible sources of the discharge.

A qualitative observation of flow can be made and can include descriptions such as none, trickle, moderate, or substantial. Additionally, flow rate can be estimated using one of the following methods:

- Record the amount of time it takes to fill a container of a known volume.
- Multiply cross-sectional flow area by flow velocity. Flow area can be estimated using mean depth and width. Flow velocity can be estimated using the travel time of an object floating near the surface over a known distance.

Common descriptions for odor include sewage, rancid/sour, petroleum/gas, sulfide, or other descriptors that characterize the odor. The severity of the odor (how strong the odor is) should also be recorded in the field.

Color can be a description of color type and intensity. It is also a quantitative measurement expressed in cobalt-platinum units (APHA, 1998).

Turbidity can be a qualitative descriptor (clear, slight cloudiness, cloudy, or opaque). Turbidity can be measured in the field with a portable turbidity meter. If a turbidity meter is used in the field, it is recommended that one make/model be used every time to reduce discrepancies between different units.

Floatables are a good physical indicator, and commonly include sewage, suds, and oil sheens. For the purposes of outfall monitoring, floatables do not include trash. The observation of sewage at an outfall location indicates that there is a potential sewer or septic leak, and indicates that the source for the sewage should be investigated.

The presence of suds can indicate many things. Some suds are naturally formed by the movement of water and can be turbulence related. Suds with a strong or fragrant odor can indicate the presence of laundry water or washwater.

If an oily sheen is observed, field personnel should attempt to determine the source of the sheen. Some oil sheens occur naturally, such as decomposition of organic materials (leaves, plant parts, etc.) in the water. This occurs when iron bacteria form a sheet-like film. This can be determined by looking at the sheen and seeing if it cracks when disturbed. Synthetic oil sheens predominantly swirl when disturbed. If this occurs, then the sheen is likely due to an oil source.

There may be physical indicators of illicit discharges even if no flow is present. These indicators include outfall damage, deposits/stains, abnormal vegetation, poor quality of pooled water, and benthic growth in a pipe. The field staff should note any of these conditions if encountered.

Along with the information collected by physical observation, analytical results of water quality testing for collected samples can provide additional information to assist in determining the source of the discharge.

4.2 Water Quality Sampling and Testing

During dry weather inspections, physical observations indicating a pollution problem do not always yield sufficient information to aid in source determination; therefore, water quality samples should be collected. Some parameters can be directly measured in the field using portable water quality meters. Other parameters require laboratory analysis. Table 2 lists the parameters that should be analyzed to isolate an illicit discharge.

Table 2. Water Quality Analytical Methods

Analyte	Analytical Method
Dissolved oxygen	Field
Specific conductance	Field
pH	Field
Temperature	Field
Biochemical oxygen demand (BOD)	SM 5210 B
Total suspended solids (TSS)	SM 2540 D
E. coli	SM9223B
Oil and grease	1664 A
Nutrients	
Nitrogen	SM 4500
Phosphorus	SM 4500
Ammonia	SM 4500
Potassium	200.7
Surfactants	Colormetric, 5540

4.3 Source Tracking

The current UNM telephone (505-277-2753) and online hazard reporting system (http://iservicedesk.unm.edu/srs_home.html) will continue to be an effective tool for locating illicit discharges. However, in situations where outfall screening and/or facility inspections identify an illicit discharge, several methods can be used to trace to the source of the illicit discharge.

Tracing techniques include visual inspections of drainage structures and lines, dye testing, damming lines to isolate areas, video inspection, indicator monitoring, smoke testing, and optical brightener monitoring traps. Other more elaborate approaches include using remote sensing tools to identify soil moisture, water temperature, and vegetation anomalies associated with failing septic systems and tracking illegal dumping activities. The most common approach for UNM will be to primarily rely upon visual inspections of the storm drains above the outfall in which an illicit discharge is suspected.

When a source of discharge is located and it is determined that the location is within another entity's jurisdiction, the cooperating entity will be contacted and informed of the discharge as soon as possible.

Some common types of discharges can be related to a known activity, and can also assist in source tracking. Some examples are provided in Table 3.

Table 3. Common Discharges and Potential Sources

Observed Discharge	Potential Causes
Clogging sediment	Construction activity without proper erosion and sediment controls
	Roadway sanding operations
	Outdoor work areas or material storage areas
Heavy algal growth	Fertilizer leak or spill
	Landscaping operations
	Hydroseeding following construction
	Failing or leaking septic system
Oil and grease	Refueling operations
	Vehicle or machinery maintenance activities
Suds discharge	Power washing of buildings
	Vehicle or equipment washing operations
	Mobile cleaning crew dumping
	Laundry or cleaner
	Household graywater discharge
Clogged grease	Restaurant sink drain connection to stormwater system

4.4 Site Inspection Procedures

In addition to maintaining a hotline for public complaints, UNM is required to have procedures in place to locate priority areas likely to have illicit discharges and to proactively conduct field assessments to check for illicit discharges and illegal connections to the UNM's stormwater system and receiving waterbodies.

Areas most likely to contain illicit discharges should be prioritized based on an analysis of land use and other specific information. The following types of areas are more likely to generate potentially contaminated discharges (Brown et al., 2004):

- Locations where there have been repeated problems in the past. These could include areas with water quality data or where repeated complaints have been filed.

- Older areas of a community, which typically have a higher percentage of illegal connections. Deteriorating sewer pipes can lead to wastewater leaks from the sanitary lines.

- Commercial and industrial areas that tend to have a higher percentage of illicit discharges and higher-risk land uses (e.g., outdoor washing, disposal of food wastes, car fueling, repair, and washing, parking lot power washing, and poor dumpster management).

- Areas where large volumes of hazardous solids and/or liquids are stored.

Table 4[RF1] lists UNM facilities with a potential to be sources of illicit discharges. These facilities, which include areas with a high risk for illicit discharge, such as automotive repair and other automotive-related activities, are shown on Figure 2. Regular inspections of these high risk facilities are important to reduce the risk of illicit discharges. Inspections of facilities that connect to the municipal storm drain systems can be used to assess the sites and to educate UNM staff about recommended pollution prevention practices. Site inspections are staff intensive, and therefore are best suited to facilities with high exposure potential.

The permit requires that UNM screen the entire jurisdiction once every 5 years. Facilities classified as having a high exposure potential will be screened first. High exposure potential facilities are based on industry type. High priority areas also include areas where there is evidence of ongoing dumping or illicit discharges, or where there are citizen complaints for more than 5 separate events within 12 months in a specific area.

Site inspections of the facilities include site visits and visual observations. Educational materials will be given to the facility operator(s) to provide information on what illicit discharges are and how to avoid them. Documentation of findings for each site will be recorded on the Site Inspection Audit Form (Appendix A); photographs may also be taken to record any significant findings.

Table 4. Potential Sources of Illicit Discharges at UNM

Name	Building No.	Description	Priority	Full Address (in Albuquerque, NM)
Automotive Center	216	Automotive repair shops	High	1800 Tucker Rd. NE
Championship Golf Course	304	Lawn and garden services	High	3601 University Blvd. SE
North Golf Course	290	Lawn and garden services	High	2201 Tucker Ave NE
University Services (surplus property)	267	Surplus property and assets	High	1128 University Blvd. NE
Centennial Engineering	112	Research and education	Medium	Redondo Drive
Center for High Technology Materials	338	Research and education	Medium	1313 Goddard SE
Crystal Growth	331	Research and education	Medium	1000 University Blvd
Food Services	77, 48, 102, 60, 160, 201, 235	Eating places	Medium	Numerous
Ford Utilities Plant	116	Utilities	Medium	300 University Blvd. NE
Landscape Equipment Building	0276A	Lawn and garden services	Medium	1713 Las Lomas Rd. NE
Landscape Storage Building	213	Lawn and garden services	Medium	
Manufacturing Training and Technology Center	341	Research, development, and education	Medium	800 Bradbury Drive SE, Suite 235
Mechanical Engineering	122	Research and education	Medium	Redondo Drive
Recycling	276	Scrap and waste materials	Medium	1008 University Blvd. NE
Storage Yards	274	Public warehousing and storage	Medium	1703 Lomas Blvd. NE
Lomas Chiller and Cogeneration Plant	176	Utility	Medium	1925 Las Lomas Rd NE
Student Union Building	60	Food and copy services	Medium	1 Roma Ave NE
Clark Hall	22	Chemical & research laboratory supplier, education	Low	300 Terrace St. NE
Hospital	235	General medical and surgical hospitals	Low	2211 Lomas Blvd. NE
Safety and Risk Services	233	Hazardous waste storage	Low	1801 Tucker Ave NE
Sign Shop	219	Signs and advertising specialties	Low	1710 Tucker Rd. NE

4.5 Follow-Up Actions

If a potential illicit discharge is observed at a facility (i.e., improperly contained used oil drums, staining, evidence of past spills, etc.) or once the source of an illicit discharge has been identified, the operator should be notified of the problem, and the appropriate educational materials and/or a copy of the IDDE ordinance should be provided. The field investigation staff should complete the Site Inspection Audit Form (Appendix A); all information included on this form should be entered into the illicit tracking database to document the findings. If there is a potential illicit discharge observed during a facility inspection, field investigation staff may return to the facility to verify that the recommended action has been taken by the facility to mitigate the potential problem. The field investigation staff or other SRS staff can then begin working through the corrective action steps outlined in Section 5.

The permit also requires that complaint records for the last permit term be reviewed, and that a targeted source reduction program be developed for those illicit discharge/improper disposal incidents that have occurred more than two times in two or more years. This is an uncommon occurrence at UNM. UNM does actively pursue complaints and has a targeted source reduction program in place.

4.6 Immediate Response Procedures

The field crew should be prepared to take immediate action in the event of encountering one of the following situations:

- Individuals actively in the process of introducing possible illegal substances or materials to the storm drain system
- Very strong chemical odor or fumes/smoke emanating from the storm drain system
- Visible significant stream of a controlled chemical or petroleum product flowing in the storm drain system
- Any condition that poses or could pose an immediate threat to property, human health and safety, or aquatic life

If field personnel encounter any of the above situations, they should immediately contact the on-call SRS Duty officer. If it is determined to be an imminent threat to human health or the environment, 911 should be contacted and advised.

5. Corrective Actions

The response by SRS will vary depending on the type, location, frequency, severity, and source of illicit discharge. SRS have several options available to address a specific discharge. The preferred approach to address illicit discharge problems is to pursue voluntary compliance through the area operator or responsible party education. Operators are often not aware of the existence of illicit connections or activities at their facility that may constitute an illegal discharge. Providing the responsible party with information about the connection or operation, the environmental consequences, and suggestions on how to remedy the problem may be sufficient to secure voluntary compliance.

Education begins during the site investigation when the operation or connection is first confirmed. Operators will be informed of any problems that need to be corrected. SRS will conduct follow-up site visits to verify that the recommended action has been taken by the facility. Field staff should also provide the operator with an educational brochure describing illicit discharge violations. Field staff will remind operators to report discharges to SRS.

5.1 Operational Problems

Facility operators are responsible for correcting operational problems that lead to illegal discharges to the storm drainage system. Examples include moving washing activities indoors or undercover, covering material storage areas, or other operational modifications. Through facility outreach and education during site visits, UNM can provide technical assistance to aid operators in identifying the required modifications.

5.2 Structural Problems

Most illicit connection problems will require a structural modification to correct the problem. Structural repairs can be used to redirect discharges such as sewage, industrial, and

commercial cross-connections. Such cross-connections must be rerouted to an approved sanitary sewer system.

5.3 Enforcement Actions

When voluntary compliance does not produce the desired result, UNM is required to pursue follow-up enforcement action, including enforcement escalation procedures for recalcitrant or repeat offenders. SRS implements and enforces the IDDE program for the purpose of regulating stormwater quality and prohibiting illicit discharges into UNM's stormwater drainage facilities. SRS is authorized with the following methods, or any other reasonable methods, to enforce compliance with the stormwater ordinance:

- At any facility that discharges stormwater to the MS4, SRS shall have the right to install, or to require the installation of, such devices as are necessary to conduct sampling or metering of the discharger's operations.

- SRS may require any facility that is reasonably determined to have discharged a pollutant or any substance that causes, continues to cause, or will cause pollution, to conduct specified sampling, testing, analysis, and other monitoring of its stormwater discharges. The SRS may specify the frequency and parameters of any required sampling or monitoring.

- SRS may require any facility that has been found to have violated this ordinance to install monitoring equipment as necessary. The discharger shall at all times maintain the facility's sampling and monitoring equipment in a safe and operating condition. Each device used to measure stormwater flow and quality must be calibrated regularly to ensure accuracy. The SRS may also require monitoring of non-stormwater discharges if SRS reasonably believes that such discharges violate UNM's MS4 permit requirements.

- Facilities shall maintain the results of any monitoring and any supporting documentation undertaken for 3 years.

5.4 Penalties

UNM may issue a Notice of Violation to any facility that violates any provision of the ordinance.

5.5 Public Education

The permit requires UNM to conduct outreach activities to educate the UNM community about water quality protection. Outreach activities focus on reducing pollutants at the source by educating the community about their ultimate impact on the environment. As part of UNM's public outreach program, outreach material in print form is made available to the community. UNM is also a member of the cooperative group called the Stormwater Quality Team (http://www.keeptheriogrand.org/stormwater-quality-team/). The Stormwater Quality Team was formed in 2004 for the purpose of educating individuals and businesses about how to reduce stormwater pollution. One of the primary outreach campaigns is the Scoop the Poop program (http://www.keeptheriogrand.org/scoop-the-poop-2/), which addresses pet waste. This group also addresses residential (yard waste and household hazardous waste) and construction-related stormwater quality (low impact development [LID] and green infrastructure [GI]) issues, as well as many other outreach initiatives.

Other members of this group include co-permittees under the watershed-based permit, including AMAFCA, Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA), Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA), NMDOT, District 3, Sandoval County, Town of Bernalillo, and Village of Los Ranchos.

Illicit discharges or illegal storm drain dumping can be reported to SRS via telephone (505-277-2753) or online (http://srs.unm.edu/environmental-affairs/stormwater.php).

6. Reporting and Recordkeeping

Tracking and documentation is a required part of the IDDE program. SRS keeps a database with inspection data obtained during IDDE screening, dry weather water quality screening results, illicit discharge sampling water quality results, and illicit discharge complaint data collected by SRS.

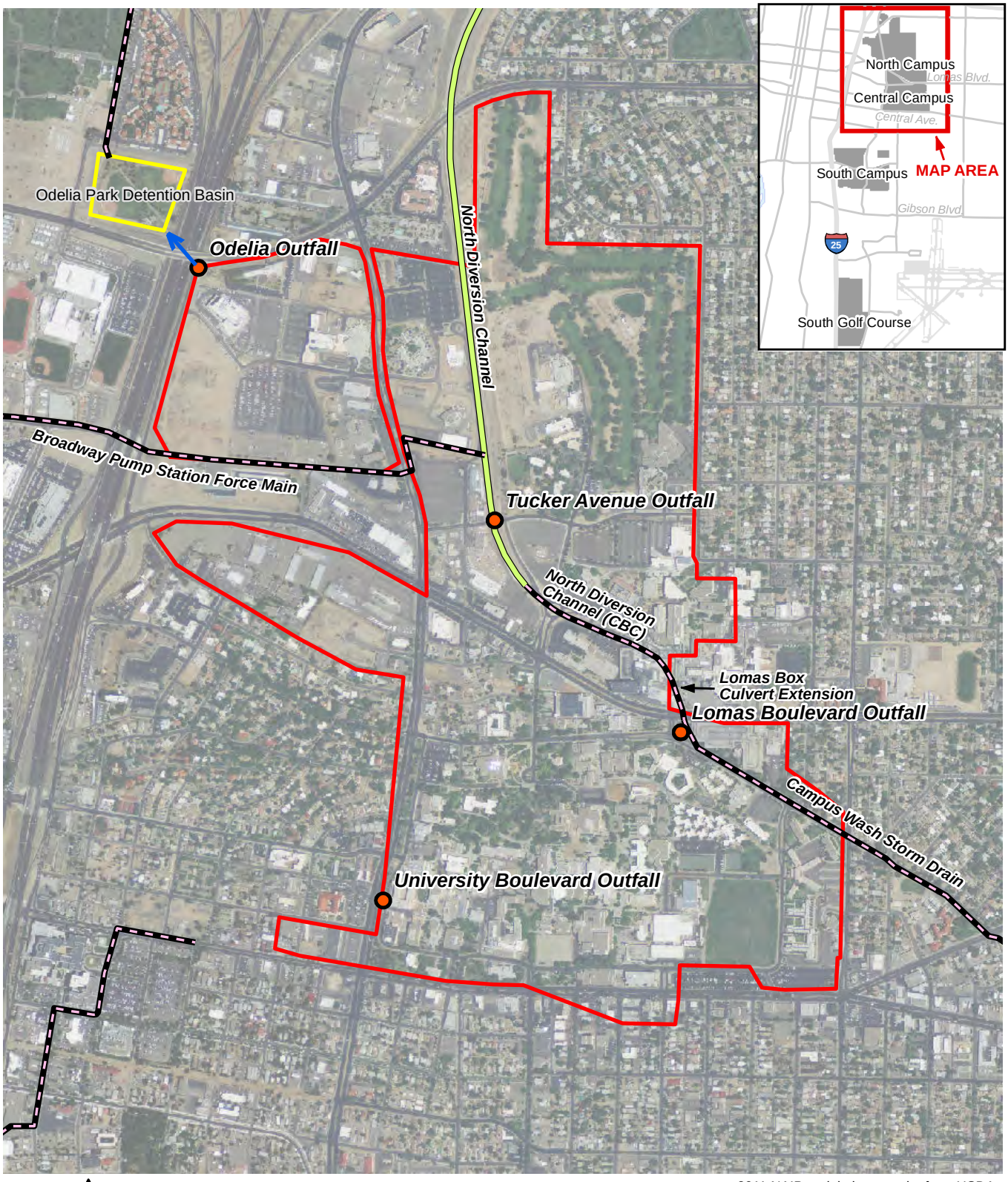
Spills reported to SRS will be recorded on an Illicit Discharge Incident Report Form (Appendix A). Field personnel who encounter or are involved in a spill will contact the SRS or fill out an Illicit Discharge Incident Report Form (Appendix A). Field personnel conducting site inspections will fill out the Site Inspection Audit Form (Appendix A) for each site and photograph any significant findings as needed. Any corrective action taken for an illicit discharge incident will be tracked and recorded. All of this information will be added to the database.

References

Brown, E., D. Caraco, and R. Pitt. 2004. *Illicit discharge detection and elimination: A guidance manual for program development and technical assessments*. Center for Watershed Protection and University of Alabama. EPA Cooperative Agreement X-82907801-0. October 2004. Available at <http://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf>.

U.S. Environmental Protection Agency (U.S. EPA). 2014. *Middle Rio Grande watershed based municipal separate storm sewer system permit*. NPDES Permit No. NMR04A000.

Figures



2011 NAIP aerial photography from USDA.

N

0 600 1200 Feet

Explanation

- Outfall
- Concrete channel
- Storm drain
- UNM
- Detention basin

S:\PROJECTS\ES12.0256_UNM_ENV\GIS\MXDS\FIGURES_IDDEL\FIG1A_MAIN_NORTH_CAMPUS.MXD

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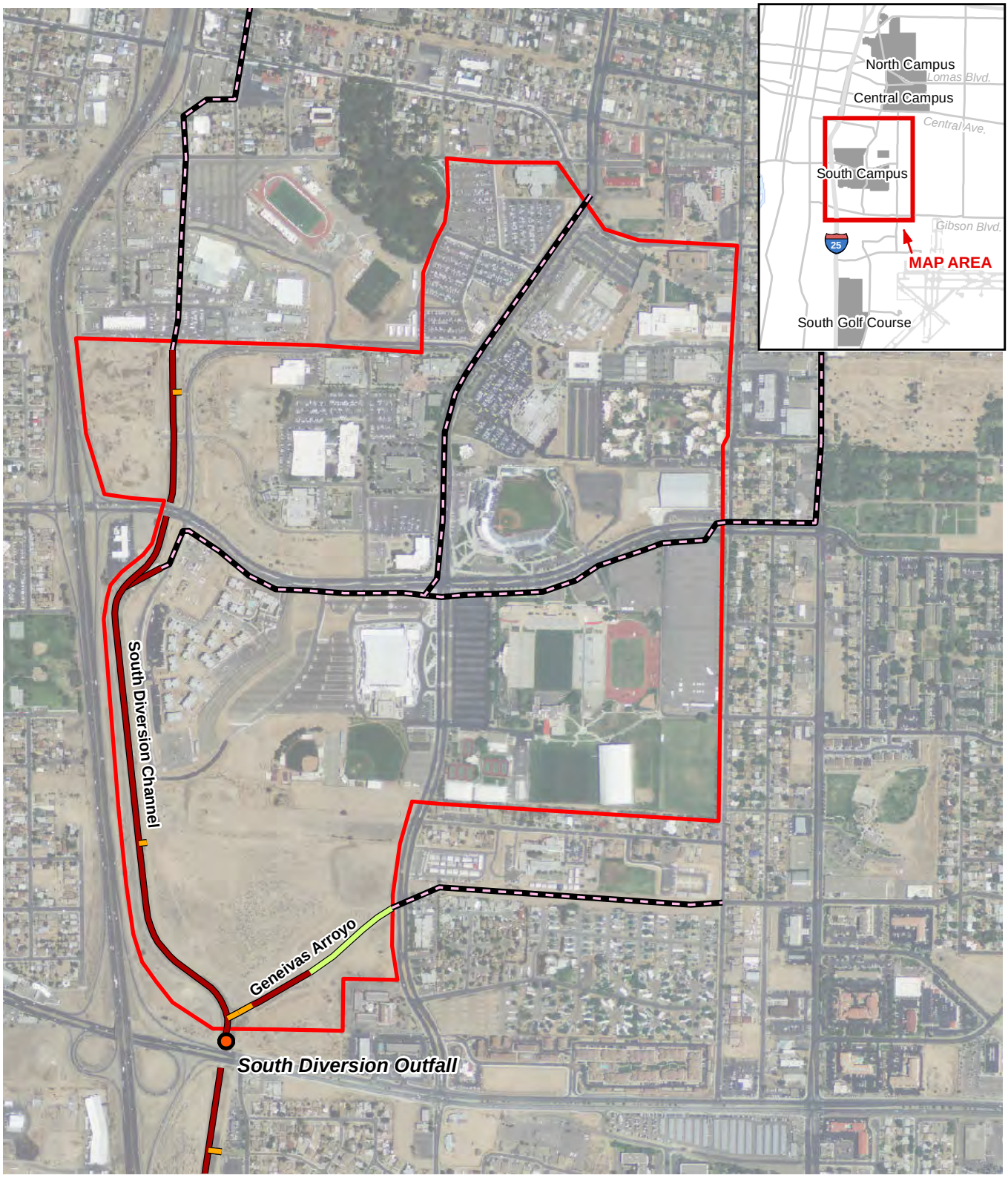
1/5/2017

JN ES12.0256

UNM STORMWATER

Main and North Campuses

Figure 1a



2011 NAIP aerial photography from USDA.

N

0 500 1000 Feet

Explanation

- Outfall
- Riprap-lined/earthen channel
- Concrete channel
- Inlet
- Storm drain
- UNM

S:\PROJECTS\ES12.0256_UNM_ENV\GIS\MXDS\FIGURES_IDDE\FIG1B_SOUTH_CAMPUS.MXD

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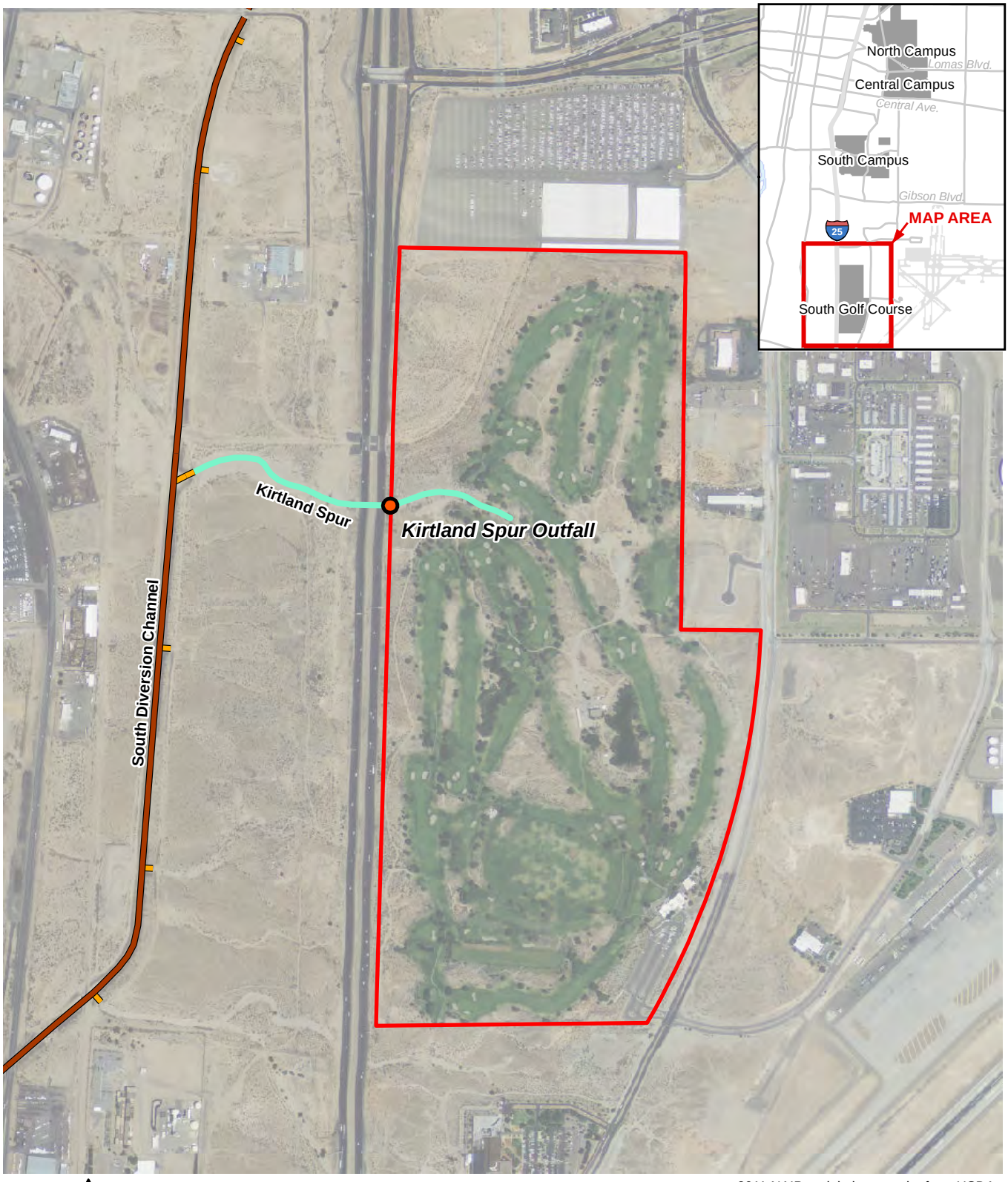
JN ES12.0256

UNM STORMWATER
South Campus
Figure 1b



2011 NAIP aerial photography from USDA.

N

0 500 1000 Feet

Explanation

- Outfall
- Riprap-lined/earthen channel
- Unlined arroyo
- Inlet
- UNM

S:\PROJECTS\ES12.0256_UNM_ENV\GIS\MXDS\FIGURES_IDDE\FIG1C_SOUTH_GOLF_COURSE.MXD

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1/5/2017

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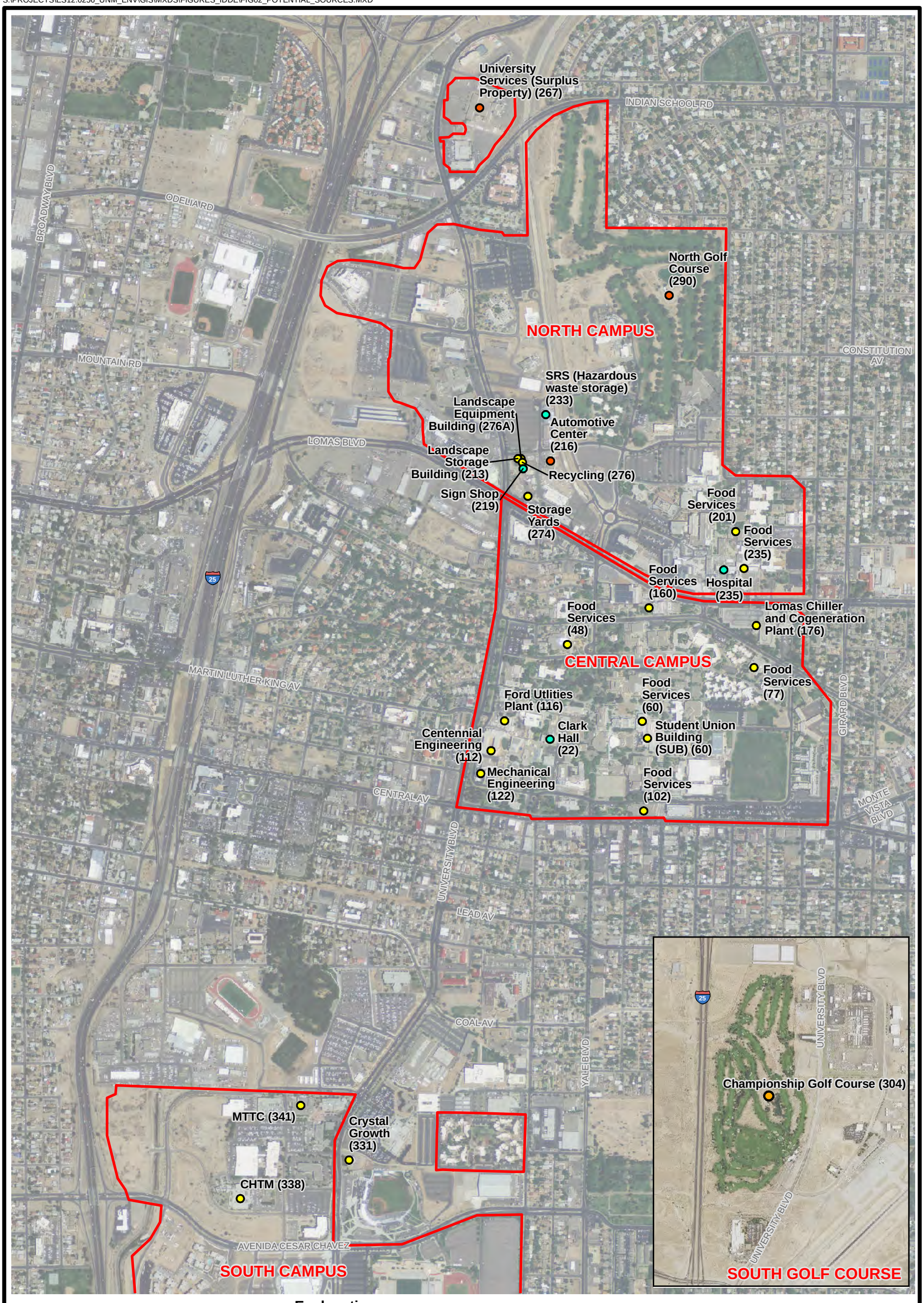
UNM STORMWATER

South Golf Course

Figure 1c

S:\PROJECTS\ES12.0256_UNM_ENV\GIS\MXDS\FIGURES_IDDE\FIG02_POTENTIAL_SOURCES.MXD



Explanation

Facility with a potential to be a source of illicit discharges

Exposure level

- High
- Medium
- Low

UNM

N

0 500 1000 Feet

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1/5/2017 JN ES12.0256

Figure 2

UNM STORMWATER

Potential Sources of Illicit Discharges

Appendix A

Reporting Forms

University of New Mexico
Storm Water Pollution Prevention Inspection Form

FACILITY INFORMATION			
FACILITY NAME:		FACILITY TYPE:	
ADDRESS:		FACILITY CONTACT:	
CITY:	STATE:	ZIP:	PHONE:
CONTACT PERSON(S) AND TITLE(S):			EMAIL:
	PHONE:	EMAIL:	
	PHONE:	EMAIL:	

AUDITOR INFORMATION		
LEAD AUDITOR:	SITE VISIT TIME:	SITE VISIT DATE:
AUDITOR:		

FACILITY ACTIVITIES				STORED ONSITE CHEMICALS			
Activity	**Yes**	**No**	**Subcontract to:**	**Material**	**Quantity**	**Container**	**Stormwater Exposure?**
Maintenance							
Equipment Maintenance							
Vehicle Maintenance							
Other Maintenance							
Painting							
Equipment Painting/Stripping							
Vehicle Painting/Stripping							
Other Painting/Stripping							
Cleaning							
Vehicle Washing							
Equipment Degrease/Washing							
Other Washing							
Storage							
Oil & Haz Chemical Storage							
Vehicle Storage							
Equipment Storage							
Salt/Sidewalk Deicers							
Handling & Disposal of Waste & Materials							
Haz-Mat/Waste Generation							
Solid Waste Generation							
Pet/Animal Waste							
Fuel Storage and Delivery							
Vehicle Fueling							
Equipment Fueling							
Fuel Storage							
Tanks (UST/AST)							
Building and Grounds Maintenance							
Floor Wash Down							
Landscape Maintenance							
Pest / Weed Control							
Sidewalk/Pavement Anti-icing							
Other							

Pollutant Impacts:
Sediment ☐ Nutrients ☐ Bacteria/Viruses ☐ Oil/Grease ☐ Metals ☐ Organics ☐ Pesticides ☐
Gross Pollutants ☐ Oxygen Demanding Substances ☐

University of New Mexico
Storm Water Pollution Prevention Inspection Form

1.0 DOCUMENTATION		Comments
Facility Inspections and Maintenance Documentation		
1.4 Retain waste generation and disposal documentation	☐ YES ☐ NO ☐ NA	
1.5 Activities inspected for non-stormwater discharges	☐ YES ☐ NO ☐ NA	
1.6 Routine Facility Inspections Performed	☐ YES ☐ NO ☐ NA	
1.7 Other (Submission of Annual Report to EPA):		
Training		
1.8 Stormwater training for all applicable employees	☐ YES ☐ NO ☐ NA	
1.9 Waste management training	☐ YES ☐ NO ☐ NA	
1.10 Fuel spill response training	☐ YES ☐ NO ☐ NA	
1.11 Herb/Pesticide Appliction Certification/Training	☐ YES ☐ NO ☐ NA	
1.12 Other:		
Other Documentation		
1.13 Do you have cumulative 1,320 aboveground fuel/oil storage? SPCC Plan available? Date of Plan?	☐ YES ☐ NO ☐ NA	
REQUIRED ACTION(S): ☐ NONE		
2.0 GENERAL HOUSEKEEPING	☐ NA	
2.1 Exposed areas clean and orderly	☐ YES ☐ NO	
2.2 Biodegradable or less hazardous products used where possible? (i.e. citrus based products)	☐ YES ☐ NO	
2.3 Material inventory limited	☐ YES ☐ NO	
2.4 Signs posted near outdoor hose bibs listing use restrictions	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		
3.0 SPILL PREVENTION	☐ NA	
3.1 Spill Response Plan posted & current	☐ YES ☐ NO	
3.2 Spill kits located where spills are probable to occur	☐ YES ☐ NO	
3.3 Spill kits stocked with appropriate materials	☐ YES ☐ NO	
3.4 Spill(s) or staining observed	☐ YES ☐ NO	
3.5 Drip pans/ spill mats/ booms used	☐ YES ☐ NO	
3.6 Collected spill materials properly disposed	☐ YES ☐ NO	
3.7 Spill History	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

4.0 MAINTENANCE ACTIVITIES ☐ NA ☐ Subcontrator:		**Comments**
4.1 Performed indoors or under storm resistant cover when practical	☐ YES ☐ NO	
4.2 Performed away from storm drains or drains covered	☐ YES ☐ NO	
4.3 Parts cleaning & degreasing performed indoors or under cover	☐ YES ☐ NO	
4.4 Designated areas for temp tanker/materials truck parking	☐ YES ☐ NO	
4.5 Exposure to run-on & run-off minimized	☐ YES ☐ NO	
4.6 Oil, grease, solvents, batteries, etc. recycled	☐ YES ☐ NO	
4.7 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

5.0 FUEL STORAGE AND DELIVERY ☐ NA		
5.1 "No Topping Off" signs present at vehicle fueling station	☐ YES ☐ NO	
5.2 Fueling tanks fitted with monitoring and alarm equip	☐ YES ☐ NO	
5.3 Fueling tanks fitted with breakaway hose connections	☐ YES ☐ NO	
5.4 Accidental releases blocked from reaching storm drains	☐ YES ☐ NO	
5.5 Equipment fueled in designated areas	☐ YES ☐ NO	
5.6 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

6.0 HAZARDOUS WASTE/MATERIAL STORAGE AREAS ☐ NA		
6.1 Materials stored indoors and away from exit doors or under storm-resistant cover when practical	☐ YES ☐ NO	
6.2 Outdoor materials stored and handled in paved areas	☐ YES ☐ NO	
6.3 Contained by berms, secondary containment, etc.	☐ YES ☐ NO	
6.4 Secondary containment adequately sized	☐ YES ☐ NO	
6.5 Containers clearly labeled and appropriate	☐ YES ☐ NO	
6.6 Liquids dispensed from upright drums w/ hand pumps	☐ YES ☐ NO	
6.7 Signage posted indicating materials being stored	☐ YES ☐ NO	
6.8 MSDS available	☐ YES ☐ NO	
6.9 Bone yard(s) present	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

7.0 SOLID WASTE ☐ YES ☐ NO ☐ Subcontractor:		
7.1 Waste and unusable material disposed of properly	☐ YES ☐ NO	
7.2 Garbage collection area properly maintained	☐ YES ☐ NO	
7.3 Dumpster drains equipped with plugs	☐ YES ☐ NO	
7.4 Dumpster lids closed	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

8.0 BUILDING & GROUNDS MAINTENANCE		Comments
Building Maintenance	☐ YES ☐ NO ☐ Subcontractors:	
8.1 Building maintenance waste disposed of properly	☐ YES ☐ NO	
8.2 Interior floor cleaning water properly disposed	☐ YES ☐ NO	
8.3 Indoor oil/water separator maintenanced	☐ YES ☐ NO	
8.4 Fire fighting foam deluge system tested and maintained, if applicable	☐ YES ☐ NO	
8.5 Other:		
Grounds Maintenance	☐ YES ☐ NO ☐ Subcontractor:	
8.6 Landscaping waste properly disposed	☐ YES ☐ NO	
8.7 Exterior ground surfaces cleaned properly	☐ YES ☐ NO	
8.8 Use of pesticide, herbicide and fertilizer minimized	☐ YES ☐ NO	
8.9 Records for pesticide/herbicide use?	☐ YES ☐ NO	
8.10 Landscaping provided for erosion control	☐ YES ☐ NO	
8.11 Outdoor oil/water separator maintenanced	☐ YES ☐ NO	
8.12 Other: ☐ NA		
Storm Drains		
8.13 Storm drains clean and free of debris	☐ YES ☐ NO	
8.14 Storm drains labeled "no dumping, drains to river"	☐ YES ☐ NO	
8.15 Stormwater control devices maintained (e.g., hay bales, basins)	☐ YES ☐ NO	
8.16 Catch basins clean and maintained	☐ YES ☐ NO	
8.17 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

9.0 SIDEWALK / ROAD DEICING ☐ NA		
9.1 Does tenant perform sidewalk deicing?	☐ YES ☐ NO	
9.2 Does tenant perform roadway deicing?	☐ YES ☐ NO	
9.3 Salt storage areas are protected from stormwater?	☐ YES ☐ NO	
9.4 Tracks annual volume of salt used?	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

10.0 NON-STORMWATER DISCHARGES OBSERVED		
10.1 Evidence of illicit discharges and improper disposal (i.e. wash waters, waste water, chemicals, etc)	☐ YES ☐ NO	
10.2 Irrigation runoff	☐ YES ☐ NO	
10.3 Building condensation	☐ YES ☐ NO	
10.4 Other (NPDES permits):	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

11.0 MISCELLANEOUS WASTES		
11.1 Animal wastes generated	☐ YES ☐ NO	
11.2 Kitchen/food wastes generated	☐ YES ☐ NO	
11.3 Waste removed on a regular basis	☐ YES ☐ NO	
11.4 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

12.0 VEHICLE AND EQUIPMENT CLEANING				
Wash the following? (3.1)	Dry-Wash	WET-WASH		Other / Comment
		Inside	Outside in Permitted Area	
Vehicles ☐ YES ☐ NO ☐ SUB:				
Equipment ☐ YES ☐ NO ☐ SUB:				
Other: ☐ YES ☐ NO ☐ SUB:				
Washing areas permitted ☐ YES ☐ NO				

13.0 VEHICLE AND EQUIPMENT STORAGE				
Store the following? (4.1)	Inside	OUTSIDE		Other / Comment
		Under Cover	Away from Drains	
Vehicles ☐ YES ☐ NO ☐ SUB				
Equipment ☐ YES ☐ NO ☐ SUB				
Other: ☐ YES ☐ NO ☐ SUB				
Storage areas maintained ☐ YES ☐ NO				

14.0 DESCRIPTION OF STORM WATER DRAINAGE

15.0 DESCRIPTION OF EXISTING STRUCTURAL BMPS AND CONDITION

INSPECTION SUMMARY

Major Non-Compliances Issues (Immediate threat to stormwater)

Minor Non-Compliance Issues (potential threat to stormwater/documentation)

INSPECTOR SIGNATURE			Time Complete	Contact Initials
Name:	Signature:			
Name:	Signature:			

University of New Mexico
Illicit Discharge Incident Report Form

RESPONDER INFORMATION - *hotline incidents only*		
Responder:	Call Date:	Call Time:
REPORTER INFORMATION		
Incident Time:	Incident Date:	
Precipiation (inches) in past 24-48 hrs:		
Caller Contact Information:		

INCIDENT LOCATION - *complete one or more below*				
Latitude and Longitude:				
Stream address or outfall #:				
Closest street address:				
Nearby landmark:				
Primary Location Description			**Secondary Location Description**	
☐ Stream Corridor *(In or adjacent to stream)*	☐ Outfall		☐ In-Stream Flow	☐ Along Banks
☐ Upland Area *(Land not adjacent to stream)*	☐ Near Storm Drain		☐Near other water source (storm water pond, wetland, etc.):	
Narrative Description of Location:				

UPLOAD PROBLEM INDICATOR DESCRIPTION		
☐ Dumping	☐ Oil/solvents/chemicals	☐Sewage
☐ Wash water, suds, etc.	☐ Other:	

STREAM CORRIDOR PROBLEM INDICATOR DESCRIPTION				
Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural	☐ Other:		
Appearance	☐ Normal	☐ Oil Sheen	☐ Cloudy	☐ Suds
	☐ Other:			
Floatables	☐ None	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead Fish
	☐ Other:	☐ Outfall		
Narrative description of problem indicators:				
Suspected Violator (Name, personal or vehicle description, license plate # , etc)				