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Multi-Sector General Permit Annual Industrial Storm Water Training For

TA50 WCRRF;

**TA-54 Area G, Area L, RANT, and the
Maintenance Facility West**

February 2017

LA-UR-17-XXXXX



Why Are “You” Taking This Training?

- **EPA’s Multi-Sector General Permit (MSGP) for Industrial Storm Water Discharges Requires Annual Training**
 - Training applies to:
 - **Employees who work at TA-50 WCRRF, TA54 Area G, Area L, RANT, and the Maintenance Facility West**, who move waste, operate equipment or vehicles, handle metal, debris and other pollutants like oil, fuel, etc. outside; or who work outside with industrial materials exposed to storm water
 - **Employees responsible for implementing activities necessary to meet the conditions of the permit** who install and maintain storm water control measures, all members of the facility MSGP Pollution Prevention Team (PPT), and Deployed Environmental Professionals (DEPs) or other personnel conducting storm water inspections and visual assessments, identifying corrective actions, writing SWPPP revisions, etc.

Incorporate LANL Goals, Policies- Worker Safety and Security Team (WSST) Safety Goal:



We make safety integral to everything we do through . . .

- Objective 1: Worker Ownership, where all workers become advocates for safety
- Objective 2: Leadership, where all managers partner with workers to demonstrate the importance of safety and communicate consistent priorities and expectations
- Objective 3: Understanding and Controlling Hazards, where all workers are encouraged and supported as they participate in safety activities
- Objective 4: Learning from Experience, where all managers solicit ideas for improvement and empower workers to take action

Why? Related LANL Goals, Policies (Safety, and Safeguard & Security)

Incorporate LANL's Environmental Management System (EMS) and Elements of the ISO 14001-2004(E) Standard

1. Environmental Policy
2. Planning
3. Implementation & Operations
4. Checking
5. Management Review and Continual Improvement

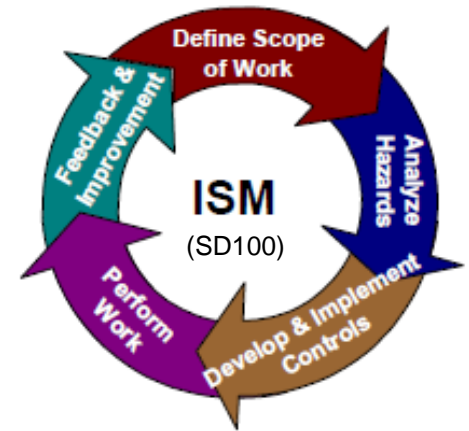


Why? DOE Order 436.1 “Departmental Sustainability,” Executive Orders, and DOE and (consequent) LANL Site Sustainability Plan

Apply the Integrated Safety into Management (ISM) and Work Practices

5 Core Functions of ISM:

1. **DEFINE** the scope of work.
2. **IDENTIFY** and **ANALYZE** hazards associated with the work.
3. **DEVELOP** and **IMPLEMENT** hazard controls.
4. **PERFORM** work within controls.
5. **PROVIDE** feedback and continuous improvement.



Water Quality

National Pollutant Discharge Elimination System Multi Sector General Permit (MSGP) Industrial Activity:

- MSGP Sector K, “Hazardous Waste, Treatment, Storage, or Disposal Facility”
- MSGP Sector P, “Land Transportation and Warehousing”

Requirements:

- Site Specific Pollution Prevention Plan, Monitoring, and Inspection

Why?

Clean Water Act, LANL’s National Pollutant Discharge Elimination System permits are for monitoring all surface waters discharges on Laboratory properties.



Pollution Prevention Team (PPT) Members for TA-54 Areas L, G, RANT, and the Maintenance Facility West

- **Les Sonnenberg, EWMO-DO, Facility Operations Director**
 - 667-4871
- **Bob Stokes, DSESH-EWMO, ESH Manager**
 - 606-0947
- **David Schrock, DSESH-EWMO, Deployed Environmental Professional**
 - 665-6547
- **Vicky Baca, DSESH-EWMO, Deployed Environmental Professional**
 - 665-9958
- **Holly Wheeler, ENV-CP MSGP Project Manager**
 - 667-1312

Pollution Prevention Team (PPT) Members For TA-54 Area L, Area G, and RANT (continued)

- **Gail Helm, Operations Manager (OM)**
 - 665-8682
- **John Guy, Shift Operations Manager (SOM)**
 - 606-1555
- **Nancy McAllister, Waste Management Coordinator (WMC)**
 - 412-7314
- **Dave Williams, Waste Management Coordinator (WMC)**
 - 667-0489
- **Joe A. Garcia, Waste Management Coordinator (WMC)**
 - 665-7583

Pollution Prevention Team (PPT) Members For TA-54 Maintenance Facility West

- **Barry Walker, EWMO Maintenance Manager**
 - 665-2527
- **Smitty (Louis) Smith, Work Execution Manager**
 - 665-8678
- **Orlando Archuleta, Maintenance Supervisor**
 - 665-0472
- **Nancy McAllister, WMC**
 - 412-7314
- **Dave Williams, WMC**
 - 667-0489

Training Objectives

- **Cover all aspects of training identified in the MSGP**
 - Monitoring
 - Inspections
 - Planning
 - Reporting
 - Documentation requirements
- **Become familiar with specific storm water pollutants and potential controls at TA-54 Area L, Area G, RANT, WCRRF, and the Maintenance Facility West**
- **Cover spill prevention and response**
- **Recognize potential pollutant sources**
- **Recognize good housekeeping practices**
- **Understand “No Exposure” requirements**
- **Know who to call if issues arise (see slide of PPT members)**

What Does “No Exposure” Mean?

- **A condition of no exposure exists at an industrial facility when..... all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff.**
 - Industrial materials and activities include, but are not limited to:
 - material handling equipment or activities,
 - industrial machinery,
 - raw materials,
 - intermediated products,
 - by-products,
 - final products, or
 - waste products.
 - Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, by-product, final product or waste product.



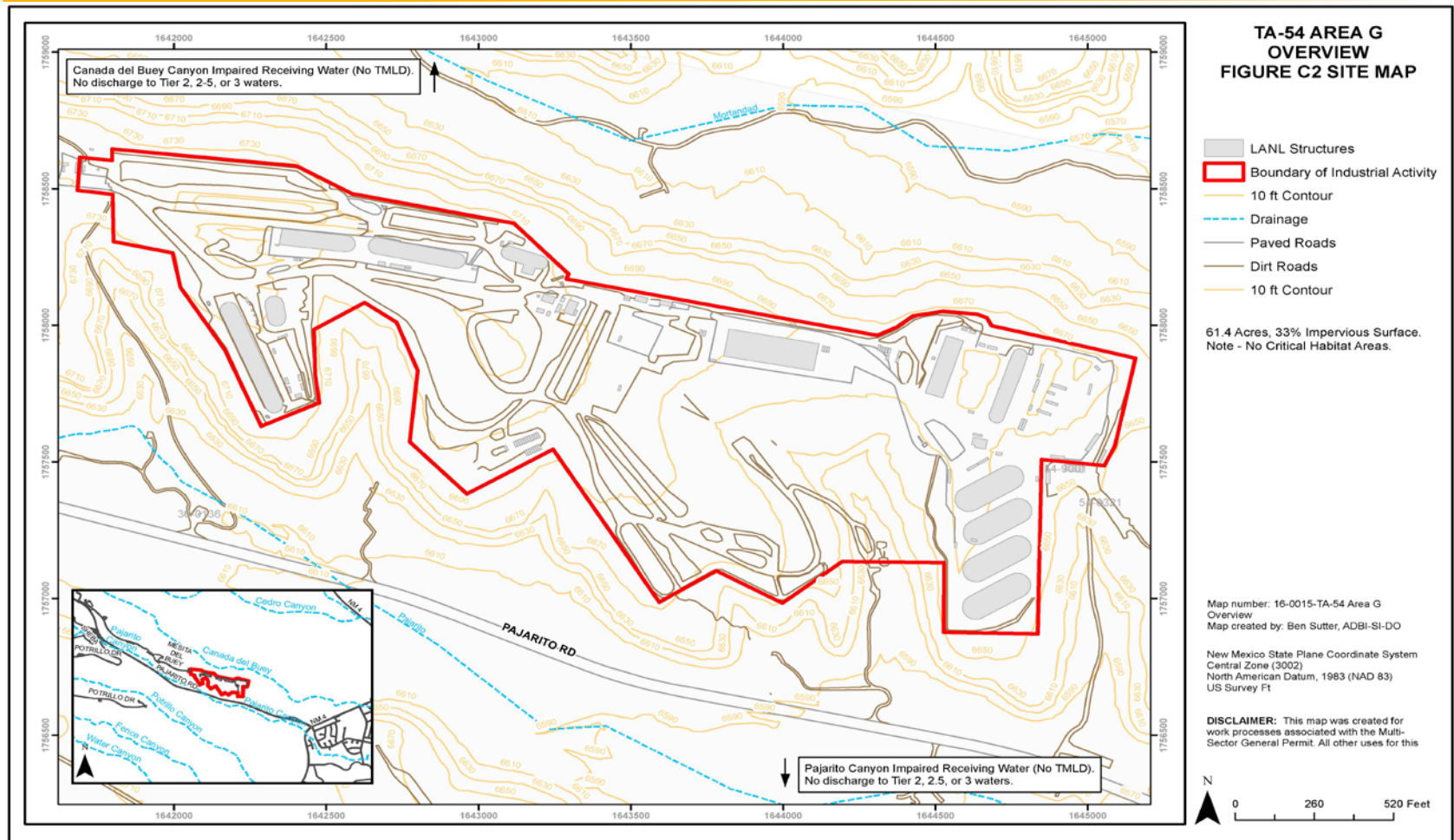
EWMO Facilities In The Condition Of “No Exposure”

- **Waste Characterization, Reduction, and Repackaging Facility (WCRRF)**
 - Became a “No Exposure” facility on 8/2/10 (last recertified 12/21/2016)
 - Sealed drums (in good condition) stored outside meet “No Exposure”
 - Must ensure all pollutant sources are protected from contact with storm water:
 - Waste or residue on the ground shall be cleaned up immediately
 - Rusted items (such as: buildings, equipment, drums, metal, etc.) stored outdoors need to be cleaned, covered or moved indoors
 - Ensure that sediment from construction projects (even small line breaks, etc.) does not run-on to the facility or migrate off the facility

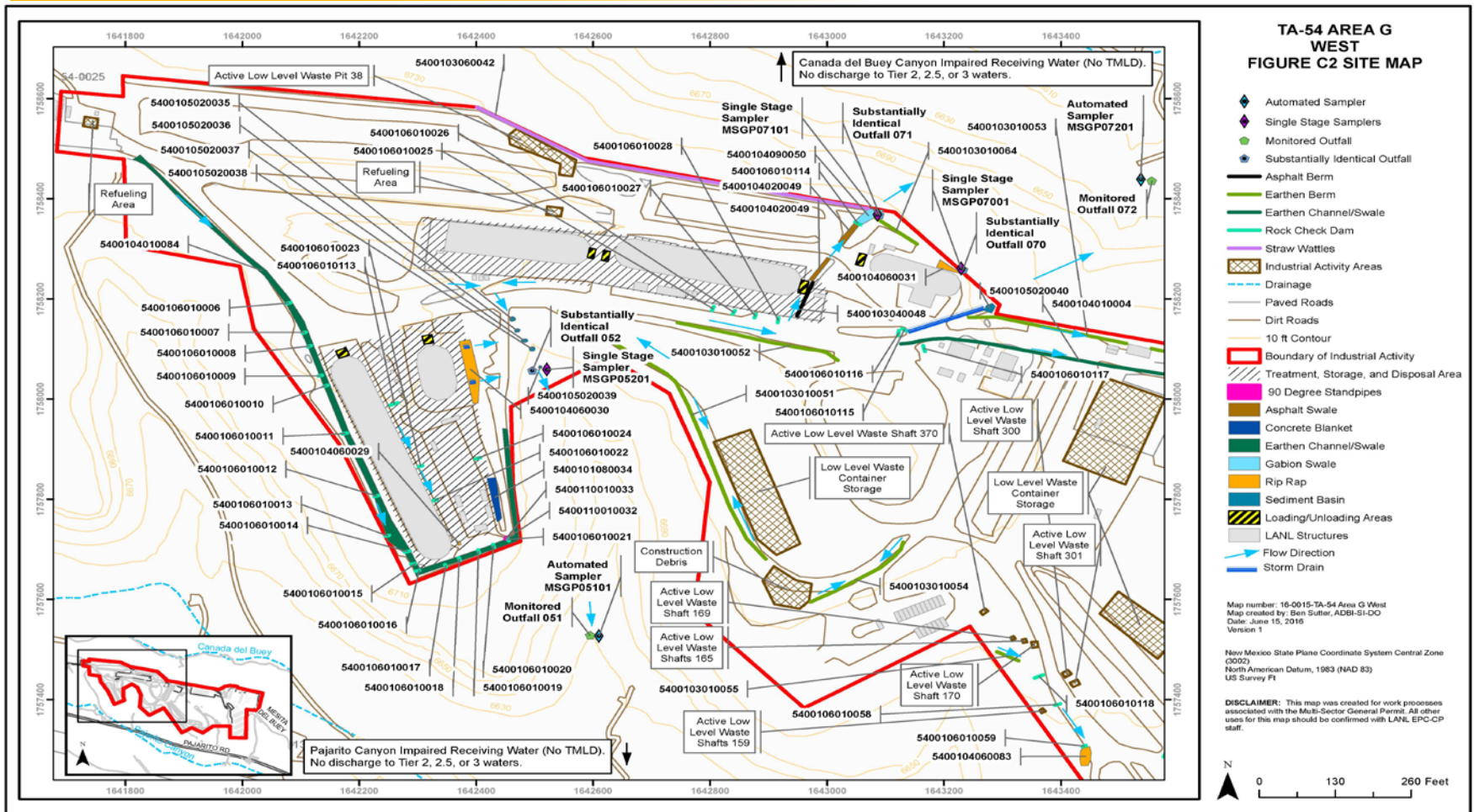
No Exposure

- Retaining “No Exposure” reduces regulatory liability and operating costs
- EPC-CP personnel will conduct inspections periodically to ensure compliance
- Must complete “No Exposure” certification form at least every 5 years and submit the original completed form to EPC-CP
- If a facility loses its “No Exposure” status by allowing pollutants (including sediment) to come in contact with storm water, the following is required
 - Development of a Storm Water Pollution Prevention Plan
 - Routine Facility and Quarterly Visual Inspections
 - Follow-up for identified corrective actions

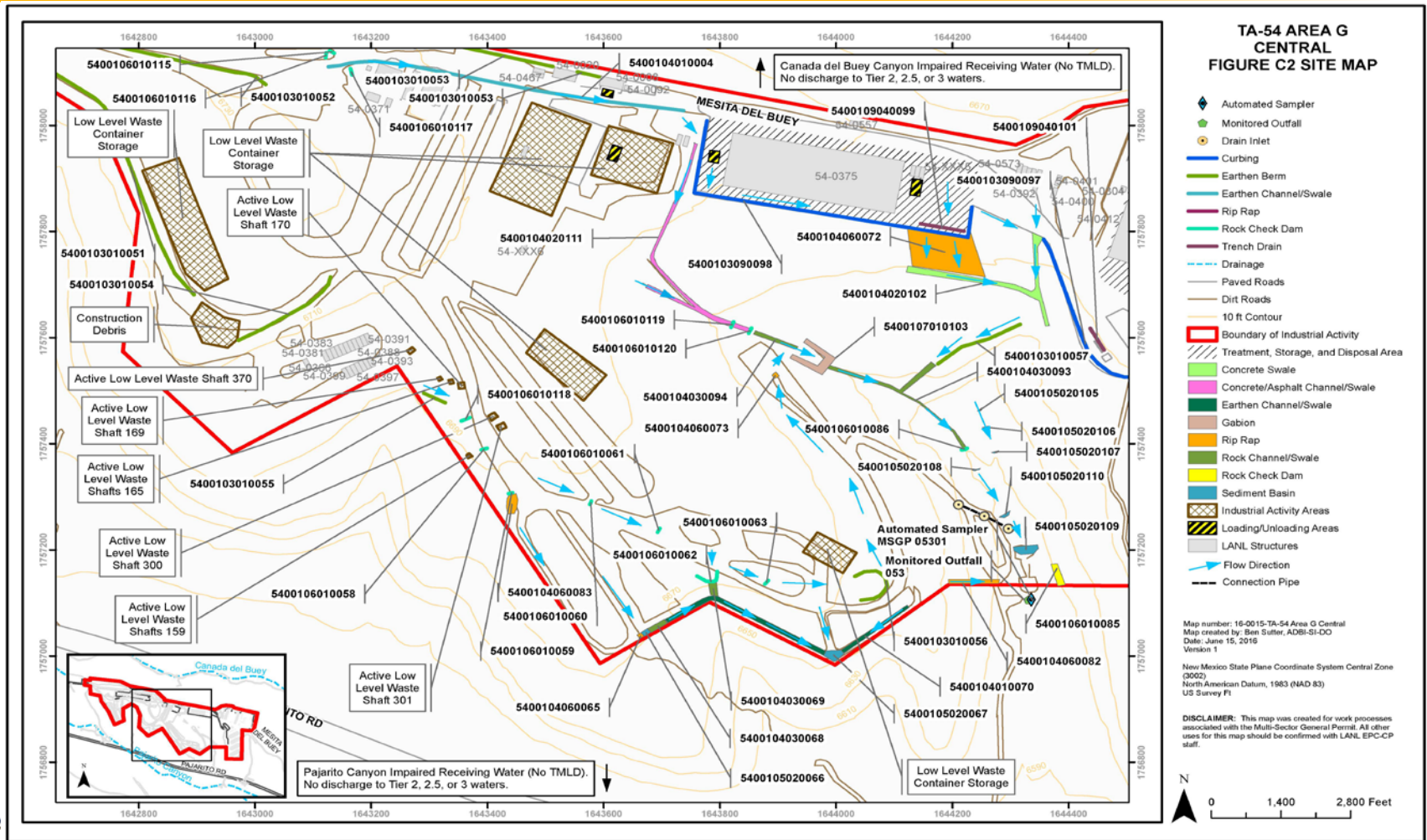
TA-54 Area G (Map Overview)



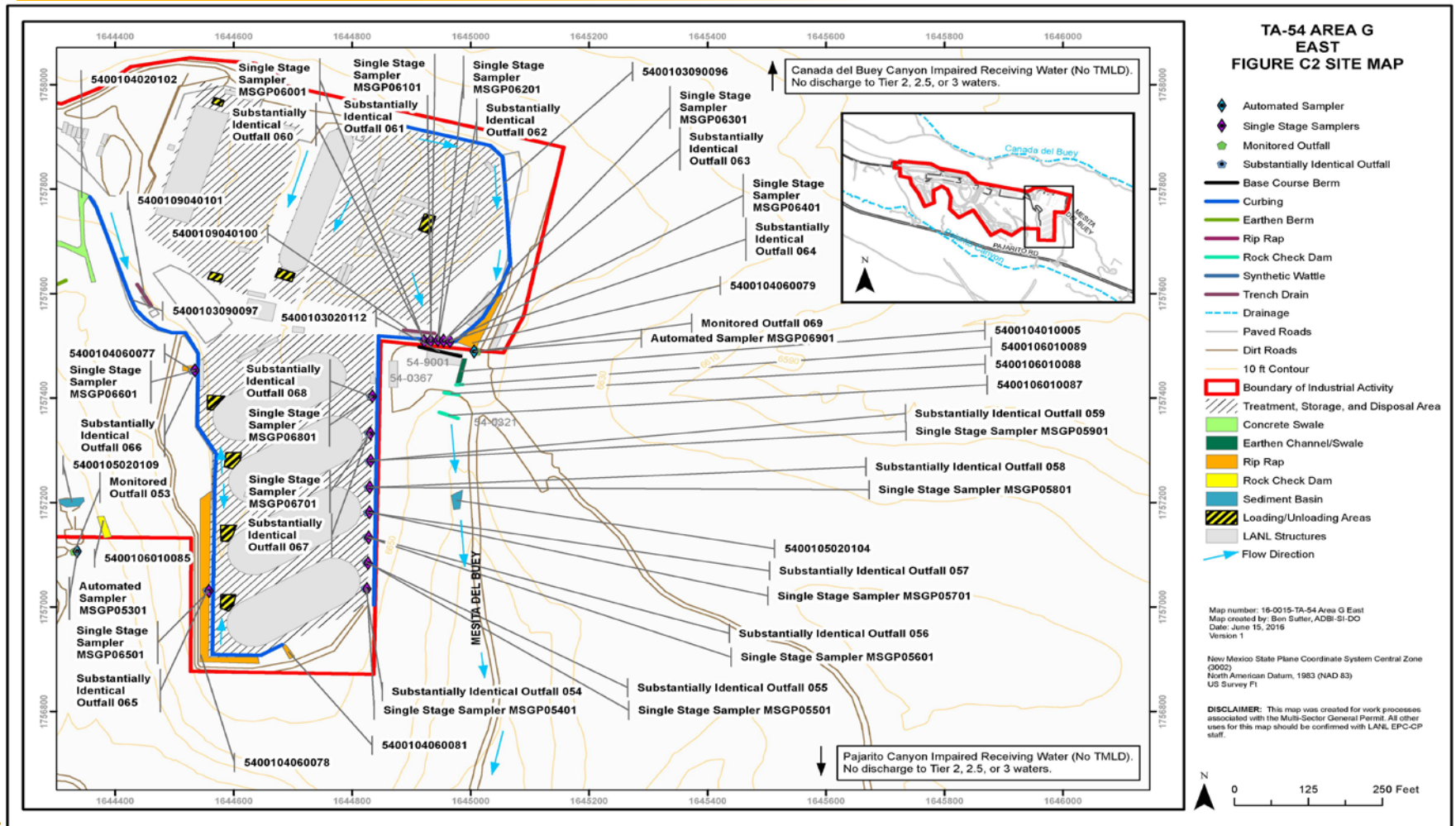
TA-54 Area G (West) Facility Map



TA-54 Area G (Central) Facility Map



TA-54 Area G (East) Facility Map



TA-54 Area G Samplers And Outfalls

- **Four automated samplers outside the fence at Area G**
 - MSGP 05101 located east of Pad 7
 - 1 outfall
 - MSGP 07201 located north and east of Dome 33
 - 3 outfalls
 - MSGP 05301 located west of the TWISP Domes
 - 2 outfalls (all are drainage piping in the concrete retaining wall west of the TWISP Domes)
 - MSGP06901 located east of the TWISP Domes
 - 14 outfalls (all are drainage piping in the concrete retaining wall east the TWISP Domes and southeast of Pad 10)

TA-54 Area G Sampler E248.5

The green steel box contains the automatic sampler.



The solar panel is used to recharge the automated sampler batteries.

Typical Pollutant Source Concerns at TA-54, Area G That May Come In Contact With Storm Water

- Loading and unloading radioactive, hazardous, chemical and mixed waste containers
- Outdoor waste storage in containers
- Rusty metal (e.g., buildings, drums, banding, etc.)
- Heavy equipment maintenance and refueling lay down pad west of Pit 38
 - Leaks and spills of hydraulic fluid, fuel, coolant, etc.
- Dirt staging/spoils pile west of 54-283 and cover application

Typical Pollutant Source Concerns at TA-54, Area G That May Come In Contact With Storm Water (continued)

- **Radioactive waste hauling and disposal**
 - Pit 38, shafts and debris pile

- **Heavy equipment operation-material handling for radioactive waste disposal**

- **Scrap metal staging – south and central portions of Area G**

Pollutant Source Concerns at TA-54 and TA-50-69 (WCRRF) That May Come In Contact With Storm Water

- **Hydraulic hose leaks, oil, transmission fluid, diesel or gasoline spills from vehicles and equipment**
 - Any leaks or spills must be cleaned up *immediately*
 - If spills are observed call the operations center
 - For TA-54: [665-2735](tel:665-2735)
 - For TA 50, WCRRF: [665-2797](tel:665-2797)
 - Spills result in three environmental issues
 - May affect surface water quality
 - May affect storm water quality
 - May generate waste during clean-up

Pollutant Source at TA-54 Area G

Sediment on asphalt can come in contact with:

- ✓ **stormwater**
- ✓ **filling trench drain(s)**
- ✓ **filling stormwater ponds**

If not cleaned up, it may affect water quality.



Pollutant Source At TA-54 Area G

Leaks from equipment and vehicles can be tracked and washed into trench drains if not treated.



Pollutant Source At TA-54 Area G (continued)



Oily sheen on storm water.

Pollutant Source At TA-54 Area G



Spills from equipment and vehicles can be tracked and if not treated, can be washed off the pavement resulting in a larger cleanup effort and generation of waste.

Pollutant Source At TA-54 Area G

Rusty debris and waste can result in poor housekeeping issues; or

Accumulate precipitation resulting in a release of contaminated storm water from contact with waste.



What Is A Control Measure?

Maintenance and operating procedures and practices to control the following site pollutants from coming into contact with waters of the U.S:

- Water runoff,
- Spillage or leaks, or
- Drainage from raw material storage.

Waters of the State are defined as follows:

- All canyons, tributaries to canyons, dry arroyos, or other land features that convey storm water.

Potential Control Measures

- **Routinely check under heavy equipment for spills/leaks**
 - Absorb diesel, gasoline and oil to the extent possible
 - If the leak or spill is to soil, contact the Waste Management Coordinator (WMC) before digging up and containerizing the spill residue and managing waste as New Mexico Special Waste
 - Report spills promptly to the Operations Center/SOM and then the Deployed Environmental Professional, and
 - If needed, the SOM (or designee) may call Security Emergency Response (SEO-1) at 667-6211 to respond to spills and treat oil leaks with Microblaze

Potential Control Measures (continued)

- **Submit FSR for routine clean-up of the area**
 - Pick up debris/trash/metal weekly, monthly, quarterly
- **Train personnel to recognize potential storm water pollutants and issues**
- **Keep track of projects to ensure proper control measures are installed before workers leave the site (after excavation)**
 - Work done by others like Utilities excavating water lines
 - Soil needs stabilization regardless of excavated area size because the site is regulated under the MSGP

Potential Control Measures (continued)

- **Clean up garbage and debris from the site**
- **Remove old equipment, wood, metal etc. from the site**
 - Salvage or drain fluids from decommissioned vehicles/equipment
- **Confine loading/unloading to a designated area**
- **Perform loading/unloading indoors or in a covered area to the extent possible**
- **Avoid loading/unloading in the rain**
- **Inspect loading/unloading area for problems before they occur**

Potential Control Measures (continued)

- Use drip pans where leaks and spills of fuel can occur and where making and breaking hose connections
- Use fueling hoses with check valves to prevent hose drainage after filling
- When fueling, do not top off tank
- Ensure preventative maintenance is scheduled and implemented

Erosion Control Measure At TA-54 Area G Asphalt Swale and Culvert



Erosion Control Blanket With Some Vegetation Coming In at TA-54 Area G



Sediment Control Measures at TA-54 Area G

Rocked Swale and Rock Check Dams



Sediment Control Measures At TA-54 Area G

Rock Berm and Check Dam



Velocity Dissipation Controls At TA-54 Area L Stand Pipe and Weir on Asphalt Swale



Failure of Control Measures At TA-54 Area G

EROSION



Erosion At TA-54 Area G

EROSION



Severe Erosion
SE of Pad 10

8/20/2009

20 8:25 AM

Erosion Fixed using an Earthen Berm, Swale, and Synthetic Check Wattles at TA-54 East Access Road



Monitoring Results At TA-54 Area G For 2014

■ Benchmark exceedance

- Monitoring will be continued for Chemical Oxygen Demand (COD) until an average concentration from quarterly benchmark monitoring does not exceed benchmark.
 - Benchmark for COD in the 2015 MSGP is 120 mg/L
- COD has been exceeded at outfall 069 for five years in a row
- COD has also been exceeded at outfalls 051 and 072
- Benchmark exceedances are not permit violations; however, they are an indicator that additional controls are needed to minimize discharge of pollutants

TA-54 Area G Required Monitoring For 2014 (continued)

■ Quarterly Visual Assessments (QVAs)

- EPC-CP personnel collect and evaluate samples at outfalls that have an automated sampler
 - Monitored Outfalls 051, 053, 069, and 072
- Deployed Environmental Professionals collect and evaluate samples at outfalls that do not have an automated sampler
 - Outfalls 052, 054 through 066, 070, and 071
- QVAs are required for each outfall on a rotating quarterly basis for substantially identical outfalls
 - Substantially identical outfalls are defined as outfalls that discharge substantially identical effluents

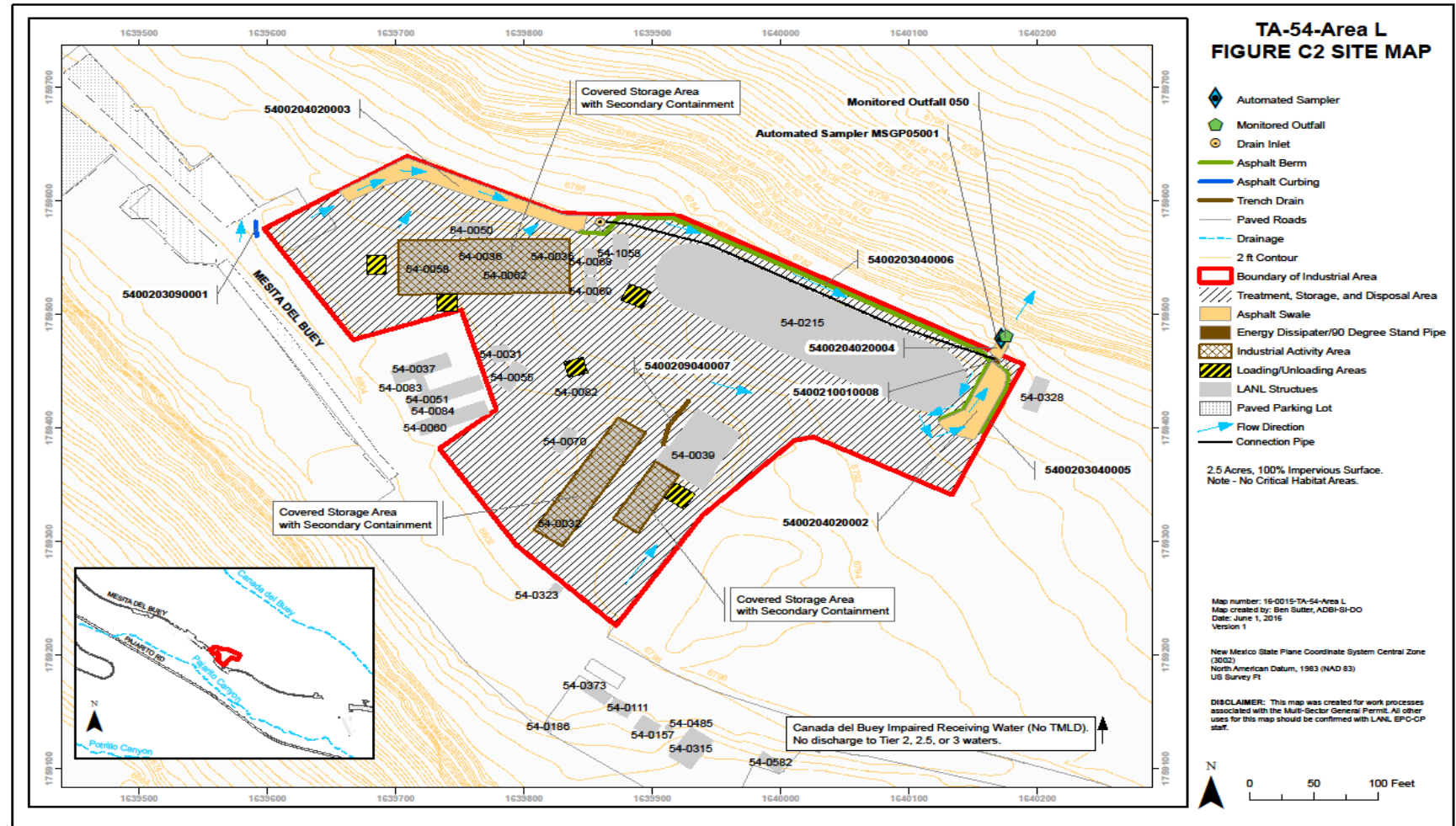
Required Monitoring At TA-54 Area G For 2015

- **2015 MSGP Benchmark monitoring (quarterly) for outfalls MSGP 051, 053, 069, 072 includes:**
 - Chemical Oxygen Demand (COD)
 - Magnesium
 - Aluminum

TA-54 Area L Sampler And Outfall

- **The auto sampler MSGP 05001 is located at the northeast corner of TA-54 Area L outside the fence**
- The outfall 050 is at the same location as identified on the following map

TA-54 Area L Facility Map



Typical Pollutant Sources At TA-54, Area L That May Come In Contact With Storm Water

- Loading and unloading radioactive, chemical, hazardous, and mixed waste containers
- Outdoor waste storage in containers
- Heavy equipment maintenance and refueling
- Heavy equipment operation and material handling
- Debris (cardboard, plastic and metal straps) from product drum packaging

TA-54 Area L Typical Pollutant Source

Cardboard boxes are trash, which is considered a pollutant.



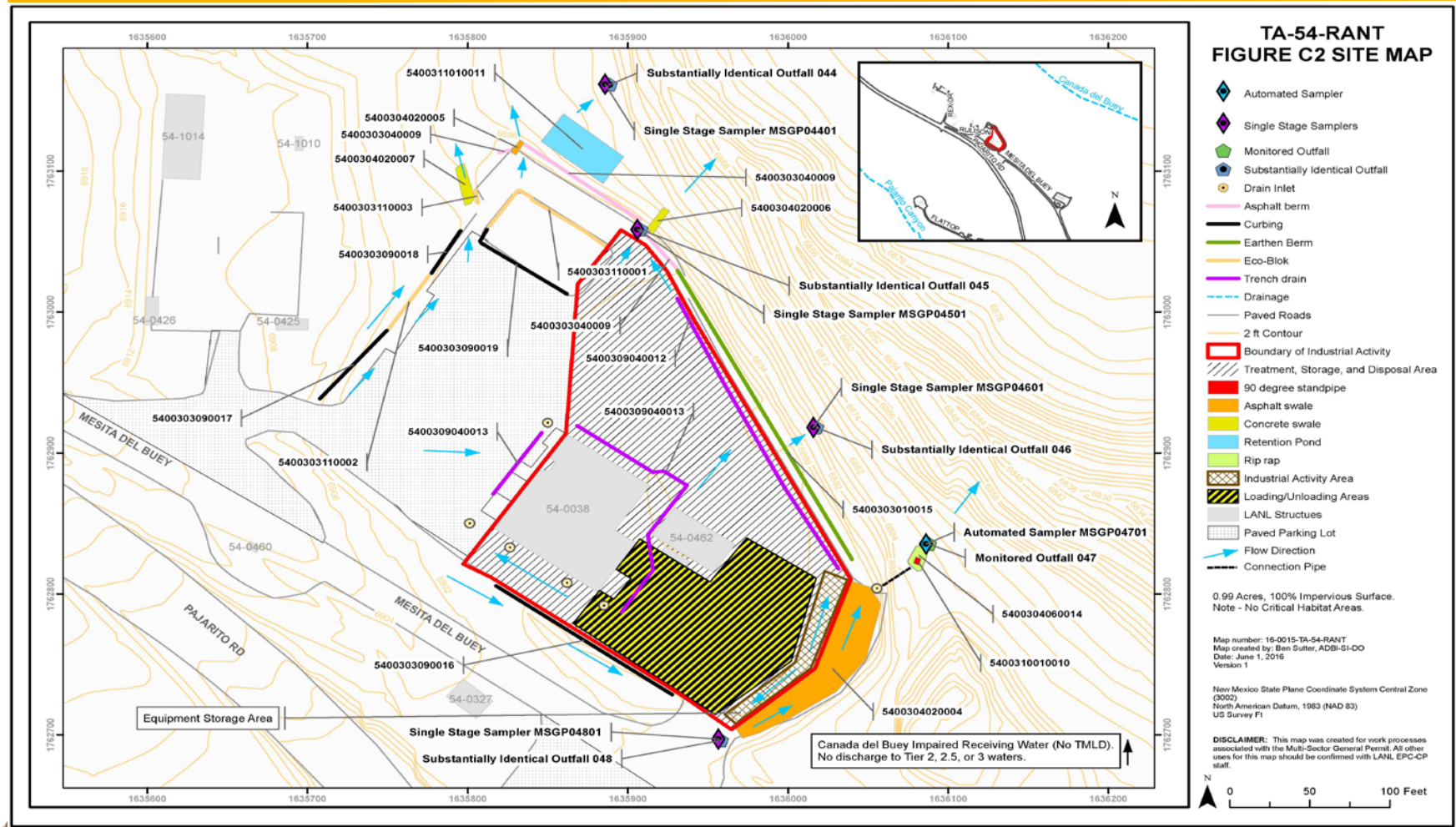
Potential Control Measures At TA-54 Area L

- Same as those specified for TA-54, Area G (see slides 21-25)

Required Monitoring For TA-54 Area L In 2015

- **The only monitoring currently required at TA-54 Area L is Routine Facility Inspections**
 - EPC-CP personnel collect these samples and conduct the visual assessments

TA-54 RANT Facility Map



TA-54 RANT Sampler And Outfall

- **The sampler is located at the northeast corner of RANT outside of the fence (as identified on the following slide)**
- Three outfalls (044, 045, and 046) are located on the north side of RANT
- One outfall is located at the auto sampler monitored outfall (MSGP 04701) at the northeast corner of the facility
- One outfall is located off the southeast corner of the facility (048)

Typical Pollutant Sources At TA-54 RANT That May Come In Contact With Storm Water

- Loading and unloading radioactive, chemical, hazardous, and mixed waste containers
- Outdoor waste storage in containers
- Heavy equipment maintenance and refueling
- Heavy equipment operation and material handling
- Sediment migration from off-site storm water run-on

Potential Control Measures At TA-54 RANT

- Same as those specified for TA-54, Area G (See slides 21-25)

Storm Water Control At RANT



Eco Bloks

UNCLASSIFIED

Slide 54

Typical Pollutant Source At TA-54 RANT

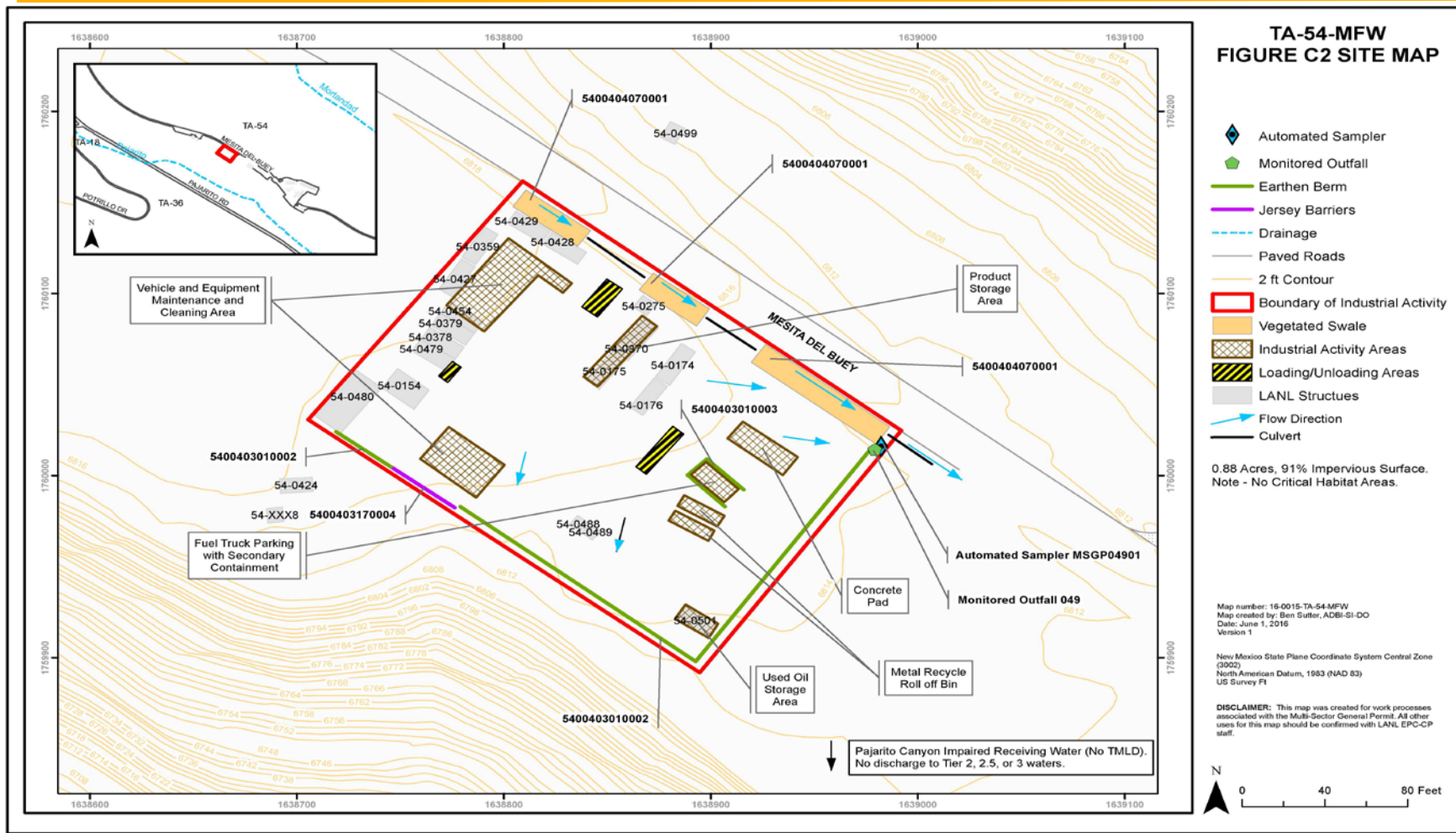
Garbage at the bottom of the swale....



Monitoring At TA-54 RANT For 2015

- **Monitoring requirements at TA-54 RANT include Routine Facility Inspections and Quarterly Visual Assessments**
 - EPC-CP personnel collect these samples and conduct the visual assessments at outfall 047
 - Deployed Environmental Professionals collect and evaluate samples at outfalls that do not have an automated sampler
 - Outfalls 044, 045, 046, and 048
 - Complete the form and send an electronic copy to EPC-CP
 - QVAs are required for each outfall on a rotating quarterly basis for substantially identical outfalls
 - Substantially identical outfalls are defined as outfalls that discharge substantially identical effluents

Map of the TA-54 Maintenance Facility West with Sampler and Outfall Location



Typical Pollutant Source At The Maintenance Facility West



Typical Pollutant Sources At The Maintenance Facility West That May Come In Contact With Storm Water



Forklifts can leak fluids onto the asphalt, which can come in contact with storm water, if not cleaned up.

Typical Pollutant Sources At The Maintenance Facility West That May Come In Contact With Storm Water (cont.)



Heavy Equipment and Recycle bins

Typical Pollutant Source At The Maintenance Facility West (continued)



Stained base course and Spill pans containing free liquids

Storm Water Control At The Maintenance Facility West



Maintain Spill Pans on base course under equipment

Monitoring at the TA-54 Maintenance Facility West

- **Impaired Waters monitoring once a year**
 - Aluminum (total)
 - Gross Alpha (adjusted)
 - Polychlorinated biphenyls (PCBs)
- **Routine Facility Inspections**
- **Quarterly Visual Assessments**
 - EPC-CP will do all of this monitoring since there is only one outfall and one sampler

Inspections and Assessments

■ Routine Facility Inspections

- Performed quarterly by a trained and qualified person in which one Routine Facility Inspection will be conducted during a rain event

■ Quarterly Visual Assessments

- Performed by Environmental-Compliance Program (EPC-CP) and/or the Deployed Environmental Professional (EWMO-DEP)

■ Inspections and Assessments may identify conditions that require Corrective Action Reports (CARs)

What Triggers A Corrective Action Report (CARs)?

- **Spills**
- **Benchmark of constituents are limits adjusted to background or water quality standard exceedance**
- **Improperly maintained control measures**
- **Process or operational changes**

Corrective Action Reports (CARs)

- **Identification of an issue either during routine operations or during an inspection**
 - Notify the Deployed Environmental Professional
 - Record the issue and corrective action
 - Enter the issue into the MSGP Corrective Action Report (CAR) Database
 - Propose a completion date
 - Follow-up and completion of corrective action
 - Perform work and record completion date in the database
 - Database automatically sends e-mails to the following personnel every 30 days until corrective actions are closed:
 - FOD Operations Manager
 - DSESH ESH Manager
 - Deployed Environmental Professionals

Planning

- **Transuranic waste shipping campaign**
 - Breached drums can release pollutants to the environment.
 - Increased truck traffic could increase potential for tracking, erosion, leaks, etc.
- **Up front planning for construction, maintenance or waste loading/unloading can help eliminate pollutant contact with storm water**
- **EPA issued the current Multi-Sector General Permit on 6/2/2015**
- **Implementation of 2015 permit began 10/3/2015.**
 - Contains “more stringent” requirements

Reporting

- **EPC-CP handles all reporting to EPA:**
 - ✓ Annual Report
 - ✓ Discharge Monitoring Reports
 - ✓ Planned physical alterations or additions to the facility that qualify it as a new source
 - ✓ Spills that exceed reportable quantities
 - ✓ Non-compliances requiring reporting
 - ✓ Correction of any previously submitted information that was in error

Reporting continued

- **TA 54 Deployed Environmental Professional:**
 - Enter issues and corrective actions into the MSGP Corrective Action Report (CAR) Database
 - Enter assessments and inspections into the ADESH Maintenance Connection (MainConn) database
 - Coordinate certification by the FOD of the information to be submitted to the Environmental Protection Agency as part of the MSGP Annual Report

Documentation Requirements

■ Documentation shall be kept in the SWPPP

- Routine Facility Inspections
- Quarterly Visual Assessments
 - Or documentation of the inability to obtain a visual assessment due to no flow
- MSGP Annual Report
- Discharge Monitoring Reports
- Background Study
- Benchmark or water quality standard exceedances
- Annual training to the 2015 MSGP requirements and Quiz documenting that employees understand the TA54 SWPPPs
- Corrective Action Reports (including documentation of spills/leaks)
- Notice of Intent to Discharge (NOI) submitted and certified to the EPA
- Copy of the TA54 SWPPPs (IAW 2015 MSGP Permit) are available in the LANL Electronic Public Reading Room (<http://epr.lanl.gov>)

What Happens If No Action Is Taken?

BNSF Agrees To Pay \$1.5 Million

BNSF Railway Co. agreed to pay \$1.5 million for Puget Sound restoration projects to resolve a lawsuit over storm water pollution at its Seattle facility.

The Puget Soundkeeper Alliance sued BNSF in 2009, alleging it violated federal clean-water laws with storm water discharges from its Balmer Yard facility.

Last August, U.S. District Court Judge John Coughenour found BNSF responsible for numerous federal clean-water violations at the facility. The settlement is one of the largest involving citizen actions taken under the federal Clean Water Act involving storm water pollution, Chris Wilke, executive director of the alliance, said.

The consent decree notes that BNSF has taken major steps to control storm water pollution from the Balmer Yard facility, including developing a prevention plan, coating roofs to minimize zinc pollution, covering trash bins and minimizing soil erosion.



Remember to incorporate the WSST Safety Goal:

We make safety integral to everything we do through . . .

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Contact information

■ Deployed Environmental Professionals

- David Schrock, [665-6547](tel:665-6547) or dschrock@lanl.gov
- Vicky Baca, [665-9958](tel:665-9958) or vbaca@lanl.gov

■ MSGP Regulatory questions or concerns

- EPC-CP: Holly Wheeler, [667-1312](tel:667-1312) or hbenson@lanl.gov

■ Leaks and Spills

- TA50 WCRRF Operations Center [665-2729](tel:665-2729)
- TA54 Area Operations Center [665-2735](tel:665-2735)
- EPC-CP: Brian Iacona, [664-0185](tel:664-0185) or biacona@lanl.gov

■ Waste Management Coordinators

- TA 50 Nancy McAllister, [412-7314](tel:412-7314) or nmcallister@lanl.gov
- TA 54 (Area G): Dave Williams, [667-0489](tel:667-0489) or dwilliams@lanl.gov
- TA 54 (except Area G) Joe A. Garcia, [665-7583](tel:665-7583) or jagarcia@lanl.gov

In Closing.....

✓ **Questions?**

✓ **THANK YOU**