

**Environmental Programs (EP)  
Document Signature Form**

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**Document Title/Subject:** Amendment #1: Plug and Abandonment of LANL Wells - LANL Wide Well Plug and Abandonment

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**Reviewer Signatures:** By signing below, the reviewer indicates that he/she **reviewed** and **approves** the document.

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<b>WCSF Amendment #1</b>	<b>Records Use only</b>
<b>Title: Plug and Abandonment (P&amp;A) of LANL Wells – LANL Wide Well Plug and Abandonment</b>	
<b>Reason for Change:</b> This WCSF is amended to include the following two additional waste streams which have the potential of being generated during well plug and abandonment activities: Storm Water (Waste Stream #15) and Residual Solids from Secondary Containment (Waste Stream #16).	
<b>Waste Description:</b> See Attachment 1	
<b>Characterization, Management, and Disposal:</b> See Attachment 1	

<b>Signatures</b>	<b>Date</b>
<b>Project Manager</b> (Print name and then sign below.) Theodore T. Bell <i>Theodore T. Bell</i>	11/16/12
<b>Preparer</b> (Print name and then sign below.) Joseph V. Buckley <i>Joseph V. Buckley</i>	11/18/12
<b>Waste Generator</b> (Print name and then sign below.) Bennie A. Martinez <i>Bennie A. Martinez</i>	1/18/12
<b>Waste Management Coordinator</b> (Print name and then sign below.) <i>[Signature]</i>	1/19/12
<b>ENV-RCRA Representative</b> (Print name and then sign below.) Joseph V. Buckley <i>Joseph V. Buckley</i>	11/18/12
<b>Waste Acceptance Representative</b> (Print name and then sign below.) Andy U. Elicio <i>[Signature]</i>	01/18/2012
<b>Waste Certification Program Representative</b> (only if radioactive wastes will be generated) (Print name and then sign below.)	
<b>Los Alamos National Laboratory</b>	

## Attachment 1:

**Waste # 15 – Storm water:** This waste stream is comprised of storm water for discharge and/or potentially contaminated storm water (i.e., tainted with petroleum or non-hazardous glycol based lubricants) collected within a secondary containment unit. It is estimated that approximately 200 gallons of storm water will be generated.

**NOTE #1:** Storm water collected in a secondary containment typically results in a waste stream that is comprised of both solids and liquids. The solids are addressed as Waste #5 and must be segregated (within reason) from storm water that cannot be discharged (is a waste) before it is containerized so that the TSS does not exceed the RLWTF WAC of 10,000 mg/L (P930-1, Attachment 1; 1.5).

**Anticipated Regulatory Status:** Reusable (released under ENV-RCRA policy), Used Oil for Recycle (Oily Water), LLW, MLLW, Hazardous, Industrial, RLWTF

**Characterization Approach:** Storm water will be characterized based on the AK from the Material Safety Data Sheets (MSDS) of the contaminant (e.g., hydraulic fluid) or by direct sampling. Samples, if needed, will be collected in accordance with LANL SOP-06.15, *COLIWASA Sampler for Liquids and Slurries* or subcontractor equivalent procedure. If the SOP is not used, the type of sampling equipment and methods used will be consistent with EPA 530-D-02-002. A representative sample will be taken within 10 days of generation (i.e., date of initial placement into container) so that a waste determination can be made within 30 days of generation and wastes dispositioned within 90 days, if necessary. All samples will be submitted with a 21-day turnaround time for analyses. Samples will be analyzed for TAL metals; radionuclides (by alpha and gamma spectroscopy); isotopic uranium, isotopic plutonium, americium-241, tritium, and strontium-90; VOCs; SVOCs; oil/grease; TSS; pH; PCB; cyanide; nitrates/nitrites; perchlorates; fluorine; chlorine; sulfate; COD; TPH; TDS; and pesticides/herbicides.

Sampling personnel must record sampling information in accordance with EP-ERSS-SOP-5058 and EP-ERSS-SOP-5181. The field notebook or sample collection sheet must be used to document sample collection activities (e.g., equipment and sampling methods used, number and location of samples, etc.). Sampling personnel must also record field conditions, problems encountered, local sources of contamination (e.g., operating generators or vehicles), the personnel involved, equipment and supplies used, waste generated, and field observations.

**NOTE #2:** The criteria for recycling oil, used oil, and coolant is as follows:

- Acceptable Oil, use Oil, and Coolant
  - Used and unused petroleum oils
  - Oil filters for non-prohibited oils
  - Non-hazardous glycol-based coolants (antifreeze)
  - Oily water
  - Used and unused synthetic oils
  - Non-hazardous used oil adsorbents
  - Mineral oil
  
- Unacceptable Oil, Used Oil, and Coolant
  - Oil with >1000 ppm halogens (oils mixed with solvents)
  - Freon-contaminated oil
  - Oils containing chlorinated compounds
  - Degreasers containing chlorinated compounds
  - Radiation-contamination oils
  - Any oil containing >2ppm PCB
  - Hazardous glycol-based coolants (fails TCLP for Se or Pb)
  - Vegetable and other food oils

**Storage and Disposal Method:** Potentially contaminated storm water will be managed in accordance with the requirements in 20-6-2-1201, New Mexico Administrative Code (NMAC) of the New Mexico Water Quality Control Commission (NMWQCC) Regulations; 40 CF 112, Oil Pollution Prevention Regulations (SPPC Plan); 40 CFR122, Construction General Permit Regulations, and applicable Storm Water Pollution Prevention Plan (SWPPP) requirements. To determine if storm water discharges from secondary containment systems are permitted on LANL property under LANL's discharge policy, the following steps are mandatory:

1. Check for oil sheen. If oil sheen exists, contact Jake Meadows, at 606-0185, for handling requirements.
2. Check pH. The pH must be between 6 and 9.
3. Notify ENV-RCRA (Jake Meadows 606-1085) prior to proposed discharge.
4. If discharge is not granted by ENV-RCRA, the contaminated storm water must be containerized and managed as waste.

Contaminated storm water that cannot be discharged will be containerized at the point of generation and managed in accordance with the regulatory classification of the waste and disposed of at an authorized treatment, storage, disposal facility.

For unintentional release or discharges of potentially contaminated storm water to the environment, the following actions must be taken:

1. Document the volume of waste released; time, date, and location of the discharge; and other conditions on the Liquid Discharge Form (see Attachment 2).
2. Submit the Liquid Discharge Form to Jacob Meadow via FAX to 505-665-9344.
3. Document the discharge in the SPCC Plan or SWPP, when applicable.

**Waste # 16– Residual Solids from Secondary Containments:** This waste stream is comprised of residual solids segregated during the containerization of storm water and decontamination fluids that have been removed from secondary containments. It may consist of residues, pebbles, soil, cuttings, and/or rocks that cannot be disposed of at the RLWTF because the TSS exceed the RLWTF WAC of 10,000 mg/L (*P930-1, Attachment 1; 1.5*). It is estimated that approximately 1 yd<sup>3</sup> of residual solids will be generated.

NOTE: Residual solids cannot be collected and added to the drill cuttings/fluids pit. They must be containerized, segregated, and managed as waste.

**Anticipated Regulatory Status:** LLW, MLLW, Hazardous, Industrial

**Characterization Approach:** Residual solids will be characterized based upon the AK of the media (i.e., cuttings, decontamination water, storm water) with which it came into contact and/or using the analytical results obtained from direct sampling. Samples, if needed, will be collected in accordance with LANL SOP-06.09, *Spade and Scoop Method for the Collection of Soil Samples* and analyzed for TAL metals; radionuclides (by alpha and gamma spectroscopy); isotopic uranium, isotopic plutonium, americium-241, tritium, and strontium-90; VOCs; SVOCs; PCB; cyanide; nitrates/nitrites; perchlorates; and pesticides/herbicides. Toxicity characteristic leaching procedure (TCLP) analysis may also be performed for TAL metals if the analytical results for the total metals divided by 20 indicate contaminants that exceed regulatory thresholds. Total petroleum hydrocarbons (TPH) will be analyzed if staining is observed. Other constituents may be analyzed as necessary to meet the WAC of the disposal facility.

Sampling personnel must record sampling information in accordance with EP-ERSS-SOP-5058 and EP-ERSS-SOP-5181. The field notebook or sample collection sheet must be used to document sample collection activities (e.g., equipment

and sampling methods used, number and location of samples, etc.). Sampling personnel must also record field conditions, problems encountered, local sources of contamination (e.g., operating generators or vehicles), the personnel involved, equipment and supplies used, waste generated, and field observations.

**Storage and Disposal Method:** Residual solids will be containerized at the point of generation and managed as non-hazardous/non-radiological pending review of AK and/or analytical results to determine final waste characterization. Residual solids from different sources (i.e., decontamination, storm water) must be segregated into different containers and analyzed separately. If the analytical data and due diligence documentation show that the residual solids are a hazardous wastes (i.e., contain constituents from a listed source), they will continue to be managed as non-hazardous/non-radioactive pending approval a "contained in" from the NMED for the potentially listed constituents. ENV-RCRA must be notified on or before day 70 of the need for a "contained in" request so that approval may be obtained from NMED.

If the residual solids are characterized as LLW they will be managed in a radioactive waste staging or storage area it can be shipped for disposal. If the residual solids are characterized as Hazardous or MLLW (with D-codes for characteristic waste) they will be managed in a less than 90-Day Storage Area (with a start date equal to the earliest date of generation by container) until they can be shipped for disposal. Residual solids will be shipped and disposed of at an authorized off-site facility.

**Characterization Table: Note – Multiple sampling may be required to ensure WAC requirements are met.**

Waste Description	Waste #15 Storm Water	Waste #16 Residual Solids from Secondary Containments
Estimated Volume	200-gallons	1-yd <sup>3</sup>
Packaging	Drums	Drums
<b>Regulatory classification:</b>		
Radioactive Waste	X	X
Reusable Material	X(Released: Used Oil for Recycle)	
Municipal Solid Waste (MSW)		
Waste destined for LANL's SWWS or RLWTF <sup>1</sup>	X	
Hazardous Waste	X	X
Mixed (hazardous and radioactive) Waste	X	X
Toxic Substances Control Act (TSCA)		
New Mexico Special Waste		
Industrial Waste	X	X
<b>Characterization Method</b>		
Acceptable knowledge (AK): Existing Data/Documentation	X	X
AK: Site Characterization		
Direct Sampling of Waste	X	X
<b>Analytical Testing</b>		
Volatile Organic Compounds (EPA 8260-B)	X	X
Semivolatile Organic Compounds (EPA 8270-C)	X	X
Organic Pesticides (EPA 8081-A)	X	X
Organic Herbicides (EPA 8151-A)	X	X
PCBs (EPA 8082)	X	X
Total Metals (EPA 6010-B/7471-A)	X	X
Total Cyanide (EPA 9012-A) <sup>2</sup>	X	X
Nitrates/Nitrites (EPA 300.09)	X	X
Dioxins/Furans (EPA 1613B)		
Oil/Grease (EPA 1665)	X	
Fluoride, Chlorine, Sulfate (EPA 300)	X	
TTO (EPA 8260-B and EPA 8270-C) <sup>3</sup>		
Total Suspended & Dissolved Solids (TSS) and Total Dissolved Solids (TDS) (EPA 180.1 and 180.2)	X	
Chemical Oxygen Demand (COD) (EPA 410.4)	X	
pH (EPA 904c)	X	
Microtox or Biological Oxygen Demand (BOD) <sup>4</sup>	X	
Perchlorates (EPA 6850)	X	X
High Explosives Constituents (EPA 8330/8321-A)	X	
Asbestos		
BTEX (EPA-8021b)		
Total petroleum hydrocarbon (TPH)-GRO (EPA 8015-M) TPH-DRO (EPA 8015-M)	X (As needed)	X (As needed)
Toxicity characteristic leaching procedure (TCLP) Metals (EPA 1311/8010-B)	X (As needed)	X (As needed)
TCLP Organics (EPA 1311/8260-B & 1311/8270-C)	X (As needed)	X (As needed)
TCLP Pest. & Herb. (EPA 1311/8081-A/1311/8151-A)		
Radium 226 & 228 (EPA 9320)	X	X
Gross Alpha (alpha counting) (EPA 900)	X	X
Gross Beta (beta counting) (EPA 900)	X	X
Tritium (liquid scintillation) (EPA 906.0)	X	X
Gamma spectroscopy (EPA 901.1)	X	X
Isotopic plutonium (Chem. Separation/alpha spec.) (HASL-300)	X	X
Isotopic uranium (Chem. Separation/alpha spec.) (HASL-300)	X	X
Total uranium (EPA 6020)	X	X
Strontium-90 (EPA 905)	X	X
Americium-241 (Chem. Separation/alpha spec.) (HASL-300)	X	X
Isotopic Thorium	X	X
Waste Profile Form #	TBD	TBD

