1. Procedure summary

This procedure describes the response activities associated with an external spill on site that would normally be associated with a regulatory reporting requirement. Spills such as a lab spill that utilizes a spill cleanup kit or is contained (for example in our acid trailer) in a containment system are not part of this document. Specific treatment of a specific spill chemistry (i.e. acid, solid fertilizer, etc.) will be handled under separate cover.

1.1. Related Procedures

1.2. Procedure impacts and concerns

Safety	Depending on the nature of the spill, various PPE (gloves, dust masks, etc.) may be required. Assess a spill of an unknown material with caution until the appropriate PPE needs can be determined. No response effort should be undertaken that would jeopardize the safety of persons or person involved with the spill event.
Quality	Sampling of spill products may be necessary to ensure accurate and adequate reporting.
Delivery	N/A
Environmental	Regulatory reporting requirements will be determined by management personnel responsible for regulatory complicance.
Cost	N/A
Compliance	Samples must be chain of custody tracked and identified in the event that they need to be sent to outside labs. Internal samples should be identified and data recorded appropriately

Definitions

Spill: Any unauthorized discharge of liquid (water, media, chemicals, pesticides, or waste) onto the ground or other uncontained area – regardless of volume. Dry spills include dry chemicals, fertilizers, salts or similar products.

Sampling: samples (falcon tubes or other) of the spilled material or the source of the spilled material.

1.3. Responsibilities and owners

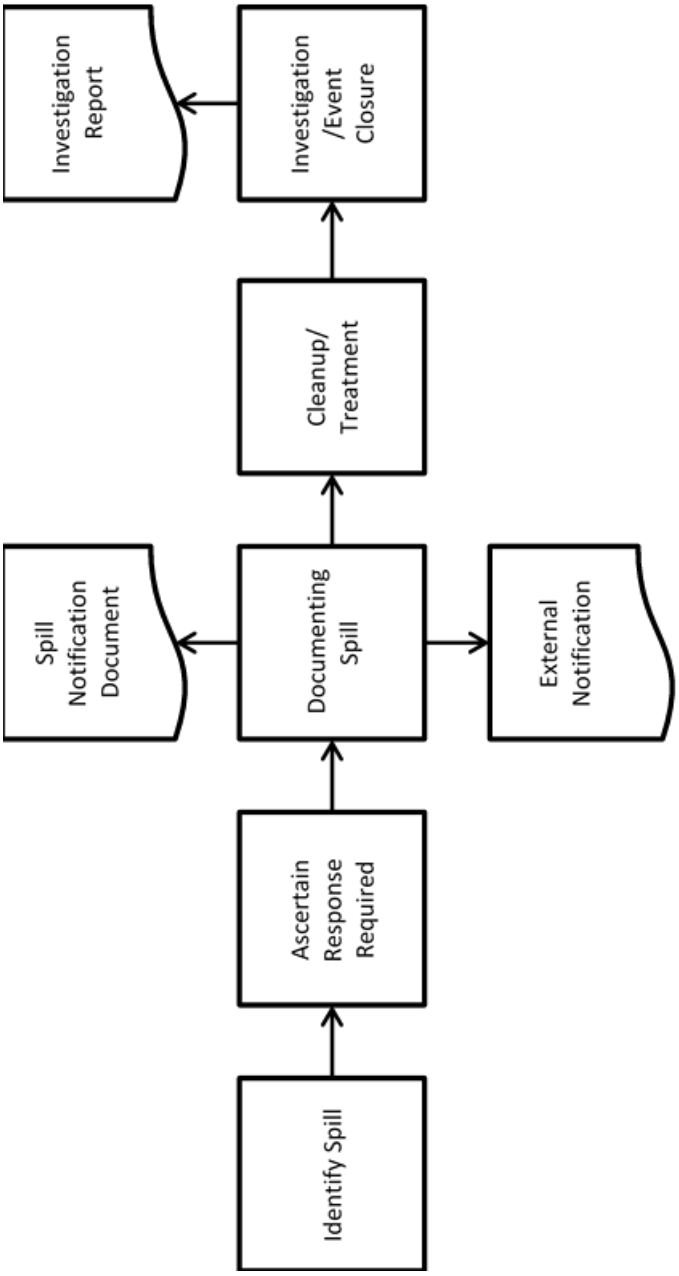
Document Owner	Manage content and distribution	Bryn Davis
Process Owner	Responsible for content and process validation	Clark Gentry
Site Manager	Responsible for implementation and conformance	Rebecca White

2. Process

2.1. Process description

This process describes the activities associated with an identifying a spill on site, determining scope and scale of site response, and internal/external reporting processes. The spill investigation responsibility is defined as well.

2.2. Process diagram


Investigation Report
Investigation /Event Closure
Cleanup/ Treatment
Spill Notification Document
Documenting Spill
External Notification
Ascertain Response Required
Identify Spill

2.3. Process steps

2.3.1. Identify Spill

2.3.1.1. Determine nature of spill event. Assessment should include estimated scale (volume or quantity) as well as hazards to personnel and / or environment.

2.3.1.2. If spill is ongoing, immediate measures should be taken to stop the continuance of the spill activity. This could include shutting valves or supply connections and/or depowering equipment. Contact facilities if assistance is needed to accomplish any securing of a system.

2.3.2. Ascertain response required

2.3.2.1. Determine clean up or treatment necessary. Identify PPE needed to specifically support activity and potential disposal requirements. Spill response is the responsibility of the "discoverer" of the spill until such time as there is a designated person to take ownership of the event. There is no walking away from a spill.

2.3.2.2. If external services are needed, they will be arranged for via the site EHS coordinator or site/facilities management.

2.3.3. Documenting Spill

2.3.3.1. Internal reporting requirements

2.3.3.1.1. All spill events should be reported to either EHS coordinator for the site and/or the site manager. This is the responsibility of the person who finds the spill to ensure that this communication has occurred. A sample needs to be taken of the source and any standing water to determine TDS (same day turnaround) and TN (24 hour turnaround).

2.3.3.1.2. All large (greater than 100 gallons liquid) should be reported immediately to site management, email and phone call as soon as possible. Smaller spills can be reported via email. All spills should be logged in the discharge log with best estimate of volume and constituents (i.e. TDS and source of contents).

2.3.3.1.3 If the incident is a loss of containment that is reportable, contact Bryn Davis with a brief summary of the spill, including rough estimate of amount lost and TDS, TN and any other pertinent factors (pesticide content, for example) and needs to be done by the end of the day

2.3.3.1.4 By the end of the next day a more complete summary of spill, including final estimate of amount lost, TDS, TN and any other pertinent factors need to be completed.

2.3.3.1.5 External Reporting: Most reportable spills need to be initially reported to the state by the responsible management within 24 hours or next business day. Completed report summary (and investigation if appropriate) is due in 7 days from the spill event. If longer investigation time is needed, preliminary report is still due in 7 days, and final report is due in 14 days after the incident.

2.3.3.2. Where ever possible, some photos should be taken to document the scale and scope of the spill as well as any pictures that would be relevant to the cause of the spill (i.e. broken pipe, torn liner, etc.).

2.3.4. Clean up / Treatment options

2.3.4.1. MSDS's should be consulted related to spill materials to ensure proper handling and the appropriate use of PPE for the activity.

2.3.4.2. For spills involving media/algae, samples should be attempted for larger spills on the ground (100 ml falcon tubes) to attempt to establish TDS and Nitrates – if the source can be sampled, there is no need to pursue this effort; it will be handled as part of the reporting and investigation activity.

2.3.4.3. All algae spills, regardless of scale, shall be treated with bleach to sanitize the algal material as best possible. This can be via pour bottle or spray as appropriate for the scale of the spill. Follow up spraying may be necessary.

2.3.5. Spill Investigation

2.3.5.1. Spill investigations will be conducted by the site EHS coordinator or their designee.

2.3.5.2. Collect data and interview parties involved.

2.3.5.3. Recommend corrective actions / improvements to preclude repeat events. Determine adequacy of training and internal response measures / resources

2.3.5.4. The spill investigation will confirm that the reported amounts were reasonably accurate and have been noted in the discharge logs.

2.3.5.5. The documented investigation will follow Sapphire's incident investigation process (such as "5 why analysis" and other recognized practices) and will be retained with the investigation files.

2.3.6. Event Closure

2.3.6.1. Review event and reporting to gain 'lessons learned' and look for trends or other potential issues that extend beyond a single event. Follow up to ensure corrective actions have been implemented.

2.3.6.1. Finalize report summary and closeout. Resubmit as appropriate.

3. Required documents

3.1. Input documents

NA	NA

3.2. Output documents

Spill notification document	TBD
External spill notification document	TBD
Investigation report	TBD

4. Document control

4.1. Revision history

R0 – Initial Release – Bryn Davis	3/15/2012
R1 – Clark Gentry	9/30/2013

4.2. Document approval

4.3. Document reviewers

5. Risk analysis

<Risk name>	<Mitigation plan>	<Owner>	<RPN>