

**Attachment "O"**  
**Preparedness, Prevention and Contingency Plan**  
**Zelman#1 Injection Well**

The following PPC plan is designated site specific for the Windfall Oil & Gas Inc Zelman #1 Injection facility.

**I. Description of Operations**

The Facility will be permitted a Class II Type D injection well and is located in Brady Township, Clearfield County. See Attachment "B" for specific location. The well will be used to dispose of produced gas well fluids into the Chert/Oriskany formation at a depth of 7306 feet below ground level.

The Permit will be issued to:  
Windfall Oil & Gas Inc.  
63 Hill Street  
Falls Creek, PA 15840

**Responsible Officials and Organizational Structure**

Michael Hoover – President	(814) 771-9686
Karen Hoover – Vice President	(814) 771-8318
The 24 hour contact number is:	(814) 771-9686

**II. Companies History of Pollution Control**

None

**III. Pollution Prevention Measures**

1. Location Construction for drilling purposes will be in accordance with the site specific Erosion and Sediment Control plan designed by Environmental Wells Development. See attached plan.
2. Produced fluids stored for disposal will be in epoxy lined steel tanks. All operations will be conducted on a concrete pad with a retaining walls to serve as secondary containment. The dyke will be designed to contain a minimum of 1.5 times the stored fluid volume.
3. The discharge manifold for unloading of the vacuum trucks will be designed so any discharge from the hoses will be contained in a concrete sump and pumped to the tanks battery.
4. All piping will be pressure tested prior to operation.
5. A high/low pressure kick out switch will be installed on the injection pump.

6. A relief valve on the pump discharge will be piped to the stored fluids containment.
7. A back pressure valve will be installed at the wellhead.
8. A fence will be erected around the facility to protect from third party acts.
9. A visual inspection of the site will be made daily to insure no environmental problems exist.
10. A quarterly inspection will be made of the tanks, filters, pumps, piping and wellhead to verify integrity.

***Hazardous Material***

The following chemicals will be used in the pretreatment phase of the operation:

Oxygen Scavenger	Fe Ox Clear
Surfactant/Corrosion Inhibitor	Alpha 3207
Corrosion Inhibitor	Alpha 2278W

Material safety data sheets are included in this section.

The following equipment will be available:

Water and Mud Pumps	Filter fabric and hay bales
Dozers& Backhoes	Vacuum trucks
Dump Trucks	Oil absorbent materials
Tractor trailers for equipment transport	Storage tank

The following Contractors will supply the equipment and materials listed above

Windfall Oil & Gas Inc.	(814) 771-9686
Miller Supply	(724) 465-8875
Multi Production Services	(724) 422-7525

***Reporting***

Any spill will be reported by: Michael Hoover  
President, Windfall Oil & Gas Inc.

1. EPA (oral within 24 hrs and written with 5 days)  
US EPA Region 3  
1650 Arch Street  
Philadelphia, Pennsylvania 19106  
(215) 814-5445
2. PA DEP  
Pittsburgh Region  
400 Waterfront Street  
Pittsburgh, Pa 15221  
(412) 442-4000

**3. PA Fish Commission**

Bill Sabatose, Commissioner  
North Central Region Office  
1150 Spring Creek Road  
Bellefonte, PA 16823  
(412) 359-5250

**IV Personnel Training**

The responsible officials shall be trained in:

Implementation of Sediment Control Plans

Construction Techniques for high pressure piping

Emergency Procedures in case of Spillage of Pollutants

**V Method of Identification**

A permanent Identification sign will be installed at the entrance to the facility. The sign shall include the facility name, company name, permit number and the 24 hour emergency number.

# **EROSION AND SEDIMENT CONTROL PLAN**

**for the**

## **ZELMAN WELL NO. 1**

**Brady Township, Clearfield County**

**Prepared For:**

### **WINDFALL OIL & GAS**

**63 Hill Street**

**Falls Creek, PA 15840**

**(814) 590-1985**

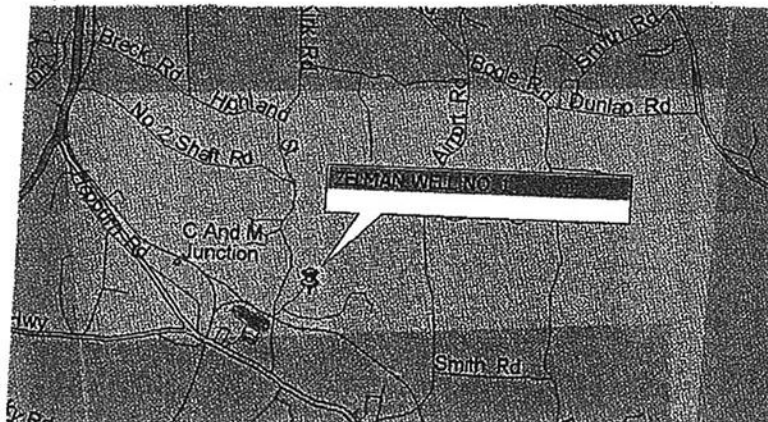
**Prepared By:**

**Environmental Wells Development, Inc.**

**P.O. Box 772**

**Indiana, PA 15701**

**(724) 349-4470**



**March 18, 2012**

**GENERAL DESCRIPTION:**

This project consists of the construction of 625 feet of access road and the excavation and grading of a site for the purpose of drilling a gas well in **Brady Township, Clearfield County**. The expected starting date will be on or about March 25, 2012. The expected completion date will be approximately nine months after completion of the well.

The staging sequence for the project will be as follows:

1. Prior to any earthmovement activity, all erosion and sediment controls (BMP's) at all streams, springs, and other sensitive areas will be installed.
2. Perform any brushing and/or clearing, if needed.
3. Earthmovement activities will begin with all culverts and drainage facilities (BMP's) installed with proper erosion and sediment controls (BMP's) installed. Rock fill will be installed as needed.
4. Well operations will be performed and completed.
5. The well site will be backfilled and all disturbed areas, including the cut and fill slopes of the access road, will be graded and immediately seeded and mulched.
6. All (BMP's) not needed for stabilization will be removed while all others will remain and be maintained until permanent stabilized.

**STAGING AND CONSTRUCTION METHODS:**

The well site is located in wooded areas with the access road leaving an existing private road and traveling over wooded and grassed areas to the well site. At the time of the field reconnaissance, the existing roadway will require only light grading with no changes to the drainage patterns and therefore is not part of this part. Under normal condition and Best Management Practices, the existing roadway should be in accordance with Chapter 102. **Note: Access roads leaving a paved road will have a clean rock entrance pad, 50 feet from the point of entry off the main road.**

**Clearing and Brushing:** The removal of trees and brush will be required to allow for the construction of portions of the project area. Savable trees will be cut and stacked along the site and will be accessible for removal. The brush will be burnt or stacked and compacted along the project area to serve as energy dissipators and filtration. Stumps removed from the project area will be buried, if permitted, or stacked and compacted along the perimeter of the project area. **Note: All brush and stumps must be within the sediment filtering devices boundary.**

**Access Road:** Where necessary, portions of the topsoil and/or excess material from the access road will be stripped and stored along the uphill side of the access road. The excess material will serve as diversion terraces and will be used during restoration. The access road will be constructed along natural contours, where possible, insloped at approximately 3 percent and constructed using a cut/fill method. The roadway will be crowned in flat areas. The access road drainage will be directed along roadside ditches, as per drawing. The installation of culverts will be required to allow the natural runoff as well as the access road drainage across the road. The discharge from the control facilities (BMP's) will be directed through siltation socks or filter fabric fence. When culverts are used, the installation of ditch line blocks will be required at the culvert's inflow end to direct the drainage through the culverts. Side slopes of six percent or greater will require the installation of larger-sized rocks at the discharge end of the culverts, to serve as energy dissipaters.

**Well Site:** Where practical, portions of the topsoil and/or excess material from the well site will be stripped and stored generally along the well site to serve as a diversion terrace and to be used during restoration. The well site will be constructed using a cut/fill method with the balance of the excess material being used as fill. The well site may require rock fill for stabilization. The on-site drainage will be directed toward an interceptor ditch at 1% and from there directed generally northwest and discharged through sediment filtering devices (BMPs) such as filter fabric fence or siltation socks. The drilling sumps will be constructed on-site of the well site, as per drawing. (Note: Site specific investigation will be performed to determine the actual depth to the seasonal high water table. If water is encountered which result in the water table being less than 20" below the bottom of the drilling sumps, alternate waste disposal methods will be performed, in compliance with 25 Pa Code § 78.56.)

**SOILS:**

The soil series for the well site is classified as Rayne-Gilpin complex, 15 to 25% slopes. This series consists of deep, well drained soils on uplands. They formed in material weathered from shale, siltstone, and sandstone. Bedrock is at a depth of 54 inches. The soil has an erosion factor of .20 and therefore the soil is considered erosion resistant. It is considered poor for road fill. (See Soil Report.)

**CONTINGENCY CONDITIONS AND DISPOSAL PLAN:**

In the course of earthmovement activities and/or drilling operations, conditions not anticipated may require the revision of the plan. If changes are required, the plan will be revised by the preparer or company field representative to reflect the project changes. The control and disposal of the generated wastes from the drilling, alteration, production, plugging, or other associated activities will be consistent with the regulations as set forth in Sections 78.55 thru 78.63 of Act 22.

**BACKFILL AND RESTORATION PLAN:**

Upon completion of the drilling activities, all disturbed areas will immediately be backfilled, graded, seeded and mulched. The disturbed areas will be graded to conform generally to the surrounding contours. Topsoil will be replaced and dressed. A level area at the well will be maintained to allow future service and access to the well. **An interceptor ditch will be installed along the toe of the cut slope along the maintenance pad to direct upslope runoff around the pad. The drainage will be discharged either through natural ground cover of grass or sediment filtering devices.** The site surface, where applicable, will be scarified with disc or other suitable implement unless soil has been completely worked since the last rainfall. Fertilizer will be applied at the rate/acre of 60 lbs. of Nitrogen, 100 lbs. of phosphorus, and 30 lbs. of potassium. All disturbed areas will be seeded with a mixture consistent with the **Penn State Erosion Control & Conservation Plantings on Noncropland manual.** A general seeding mixture is: Johnstone tall fescue (30 lbs./acre), Birdsfoot Trefoil (6 lbs./ acre), and redtop (3 lbs./acre). (Prior to seeding, lime ground limestone) will be applied at the rate of 4 tons/acre. After seeding, these areas will be mulched with hay or straw at the rate of 2-1/2 to 3 tons per acre.

All temporary controls will remain in place and be maintained until the well site and disturbed areas of the access road are stabilized with a minimum of **uniform 70 % vegetative cover.** All culverts will be clean and clear to allow for drainage flow with all energy dissipators remaining in place, where necessary. If construction is delayed, temporary seeding measures will be applied immediately, as follows: annual ryegrass or annual field brome grass applied at the rate of 40 pounds per acre.

Maintenance of the BMPs is important to insure proper performance of the control facilities. Therefore, all BMPs will be checked weekly, at a minimum, and after each runoff event, until permanent stabilization has occurred. This will be performed by a company representative or designated representative. Failure of the erosion and sediment control devices will be corrected immediately in accordance with the E&S Pollution Control Program manual.

**Surface Owner:**

**Frank & Susan Zelman**

**Operator:**

**Windfall Oil & Gas  
63 Hill Street  
Falls Creek, PA 15840  
(814) 590-1985  
Contact: Mike Hoover**



078.766666° W

078.750000° W

078.733333° W

078.716666° W

41.100000° N

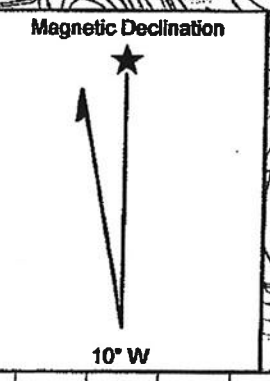
41.100000° N

083.3333° N

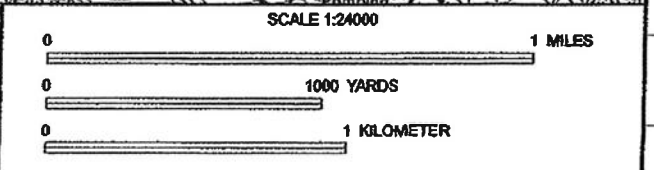
083.3333° N

41.066666° N

41.066666° N



**Zelman Well No. 1**  
**LUTHERSBURG QUADRANGLE**



078.766666° W

078.750000° W

078.733333° W

078.716666° W



## Clearfield County, Pennsylvania

### RbF—Rayne channery silt loam, 25 to 65 percent slopes

#### Map Unit Setting

*Mean annual precipitation:* 37 to 65 inches  
*Mean annual air temperature:* 45 to 55 degrees F  
*Frost-free period:* 110 to 180 days

#### Map Unit Composition

*Rayne and similar soils:* 90 percent

#### Description of Rayne

##### Setting

*Landform:* Mountains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop, upper third of  
mountainflank  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from shale and siltstone

##### Properties and qualities

*Slope:* 25 to 65 percent  
*Depth to restrictive feature:* 40 to 72 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water*  
*(Ksat):* Moderately low to high (0.06 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Moderate (about 8.2 inches)

##### Interpretive groups

*Land capability (nonirrigated):* 7e

##### Typical profile

*0 to 9 inches:* Channery silt loam  
*9 to 38 inches:* Channery silt loam  
*38 to 60 inches:* Very channery silt loam  
*60 to 64 inches:* Bedrock

## Data Source Information

Soil Survey Area: Clearfield County, Pennsylvania  
Survey Area Data: Version 6, Jul 31, 2009

## Clearfield County, Pennsylvania

### RcD—Rayne-Gilpin complex, 15 to 25 percent slopes

#### Map Unit Setting

*Mean annual precipitation:* 37 to 65 inches  
*Mean annual air temperature:* 45 to 55 degrees F  
*Frost-free period:* 110 to 180 days

#### Map Unit Composition

*Rayne and similar soils:* 45 percent  
*Gilpin and similar soils:* 40 percent

#### Description of Rayne

##### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from acid fine-grained sandstone, siltstone, and shale

##### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* 40 to 72 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Moderate (about 7.6 inches)

##### Interpretive groups

*Land capability (nonirrigated):* 4e

##### Typical profile

*0 to 8 inches:* Channery silt loam  
*8 to 47 inches:* Channery silty clay loam  
*47 to 55 inches:* Channery sandy loam  
*55 to 59 inches:* Bedrock

#### Description of Gilpin

##### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from acid fine-grained sandstone, siltstone, and shale

**Properties and qualities**

*Slope:* 15 to 25 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately high to high (0.20 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 3.8 inches)

**Interpretive groups**

*Land capability (nonirrigated):* 4e

**Typical profile**

*0 to 6 inches:* Channery silt loam

*6 to 24 inches:* Channery silt loam

*24 to 28 inches:* Channery sandy loam

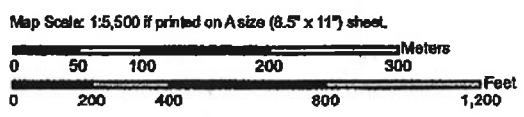
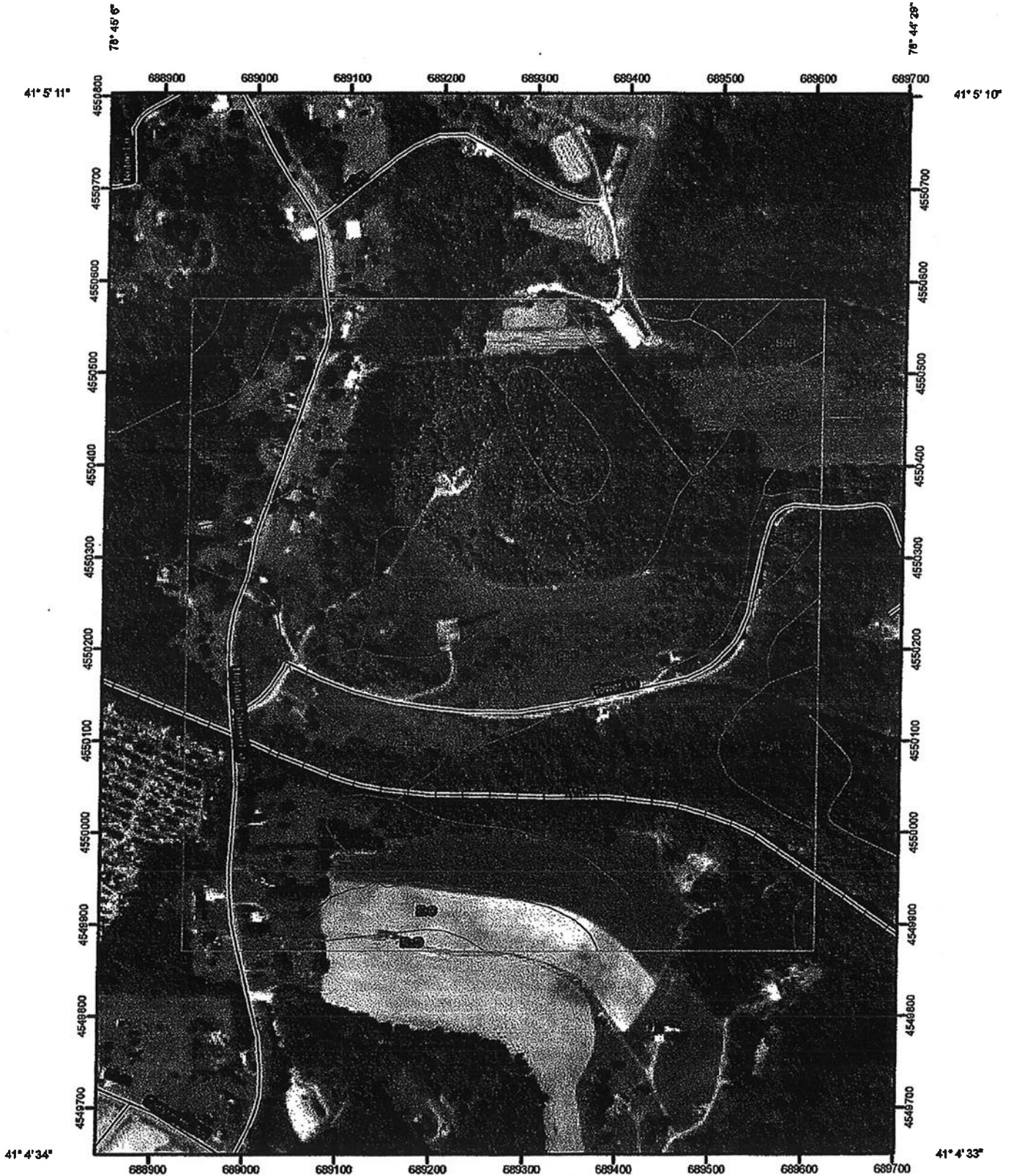
*28 to 34 inches:* Bedrock

**Data Source Information**

Soil Survey Area: Clearfield County, Pennsylvania

Survey Area Data: Version 6, Jul 31, 2009

Soil Map—Clearfield County, Pennsylvania  
(Zelman Well No. 1)



### MAP LEGEND

- |  |                        |  |                       |
|--|------------------------|--|-----------------------|
|  | Area of Interest (AOI) |  | Very Stony Spot       |
|  | Soils                  |  | Wet Spot              |
|  | Special Point Features |  | Other                 |
|  | Blowout                |  | Special Line Features |
|  | Borrow Pit             |  | Gully                 |
|  | Clay Spot              |  | Short Steep Slope     |
|  | Closed Depression      |  | Other                 |
|  | Gravel Pit             |  | Political Features    |
|  | Gravelly Spot          |  | Circles               |
|  | Landfill               |  | Water Features        |
|  | Lava Flow              |  | Streams and Canals    |
|  | Marsh or swamp         |  | Transportation        |
|  | Mine or Quarry         |  | Ralls                 |
|  | Miscellaneous Water    |  | Interstate Highways   |
|  | Perennial Water        |  | US Routes             |
|  | Rock Outcrop           |  | Major Roads           |
|  | Saline Spot            |  | Local Roads           |
|  | Sandy Spot             |  |                       |
|  | Severely Eroded Spot   |  |                       |
|  | Sinkhole               |  |                       |
|  | Slide or Slip          |  |                       |
|  | Sodic Spot             |  |                       |
|  | Spot Area              |  |                       |
|  | Stony Spot             |  |                       |

### MAP INFORMATION

Map Scale: 1:5,500 if printed on A size (8.5" x 11") sheet.  
The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning: Soil Map may not be valid at this scale.**

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 17N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clearfield County, Pennsylvania  
Survey Area Data: Version 6, Jul 31, 2009

Date(s) aerial images were photographed: Data not available.

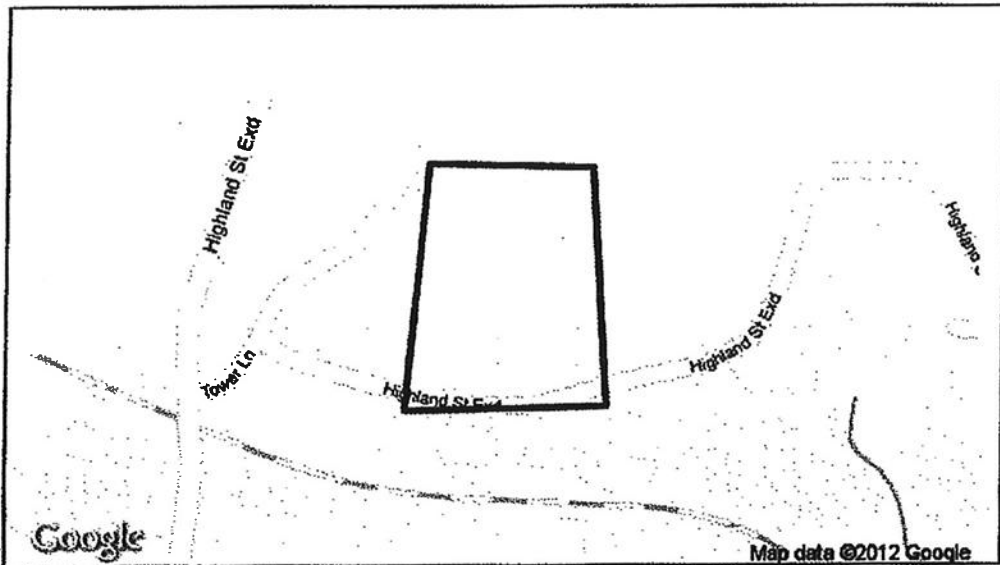
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Clearfield County, Pennsylvania (PA033)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeB	Berks shaly silt loam, 3 to 8 percent slopes	4.0	3.4%
BeC	Berks shaly silt loam, 8 to 15 percent slopes	0.7	0.6%
CaB	Cavode silt loam, 3 to 8 percent slopes	12.7	10.7%
CaC	Cavode silt loam, 8 to 15 percent slopes	4.7	3.9%
ErC	Ernest silt loam, 8 to 15 percent slopes	4.6	3.8%
GIB	Gilpin channery silt loam, 3 to 8 percent slopes	3.3	2.7%
GIC	Gilpin channery silt loam, 8 to 15 percent slopes	15.9	13.3%
RbF	Rayne channery silt loam, 25 to 65 percent slopes	15.2	12.8%
RcD	Rayne-Gilpin complex, 15 to 25 percent slopes	31.4	26.3%
WhC	Wharton silt loam, 8 to 15 percent slopes	26.9	22.5%
<b>Totals for Area of Interest</b>		<b>119.3</b>	<b>100.0%</b>

### 1. PROJECT INFORMATION

Project Name: **Zelman Well No. 1**  
 Date of review: **2/27/2012 9:42:13 AM**  
 Project Category: **Energy Storage, Production, and Transfer, Energy Storage, Other**  
 Project Area: **10.0 acres**  
 County: **Clearfield Township/Municipality: Brady**  
 Quadrangle Name: **LUTHERSBURG ~ ZIP Code: 15848**  
 Decimal Degrees: **41.082036 N, -78.748583 W**  
 Degrees Minutes Seconds: **41° 4' 55.3" N, -78° 44' 54.9" W**



### 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

**RESPONSE:** No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt, a completed PNDI form and a USGS 7.5 minute quadrangle map with the project boundaries delineated on the map. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at

### 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

### 6. AGENCY CONTACT INFORMATION

**PA Department of Conservation and Natural Resources**  
Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

**U.S. Fish and Wildlife Service**  
Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

**PA Fish and Boat Commission**  
Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please.

**PA Game Commission**  
Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

### 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:( ) \_\_\_\_\_ Fax:( ) \_\_\_\_\_  
Email: \_\_\_\_\_

### 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

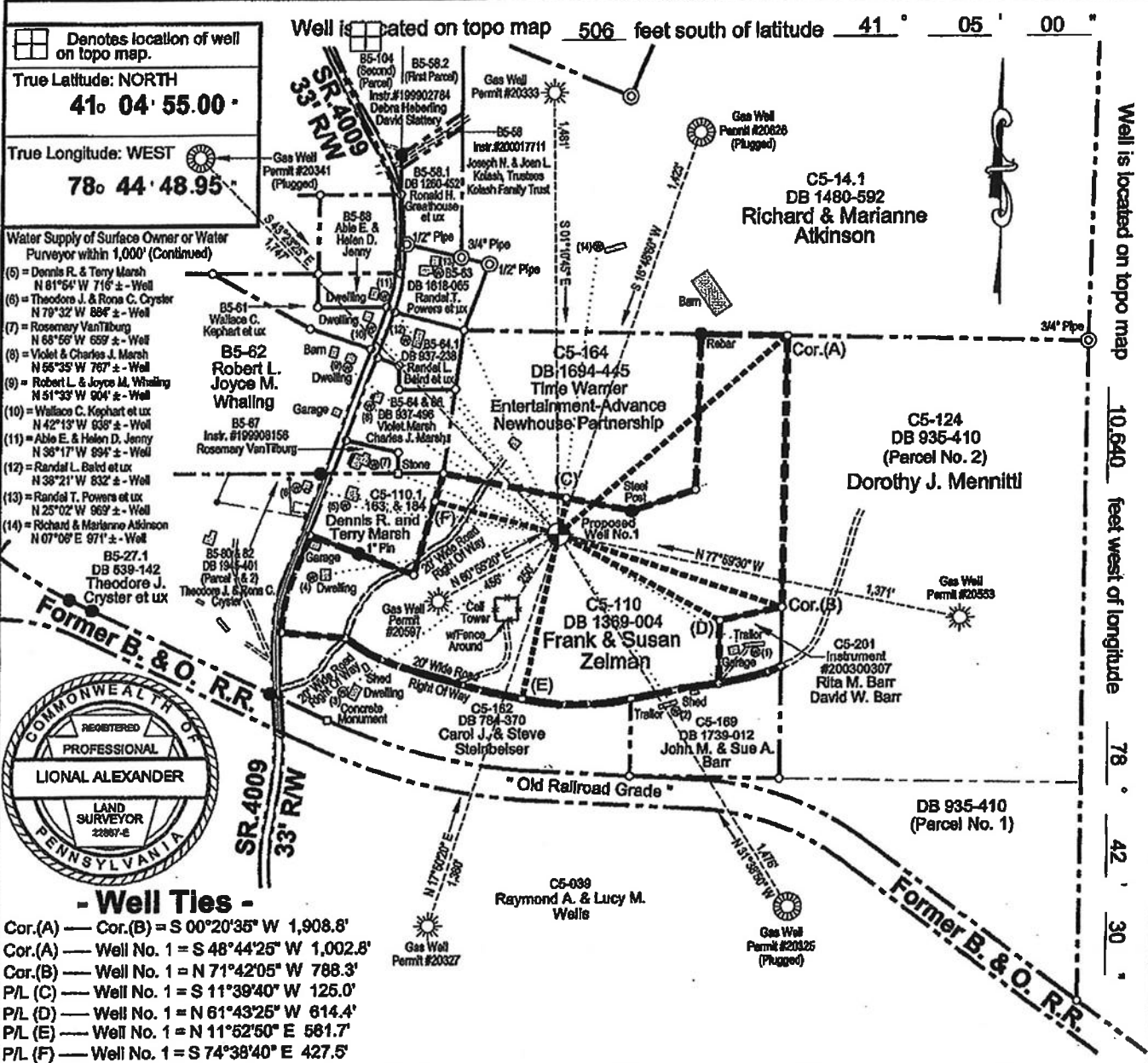
\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Oil and Gas Management Program  
**WELL LOCATION PLAT**

DEP USE ONLY	DEP Application Tracking #	G:
	Permit #	C:
	Project #	

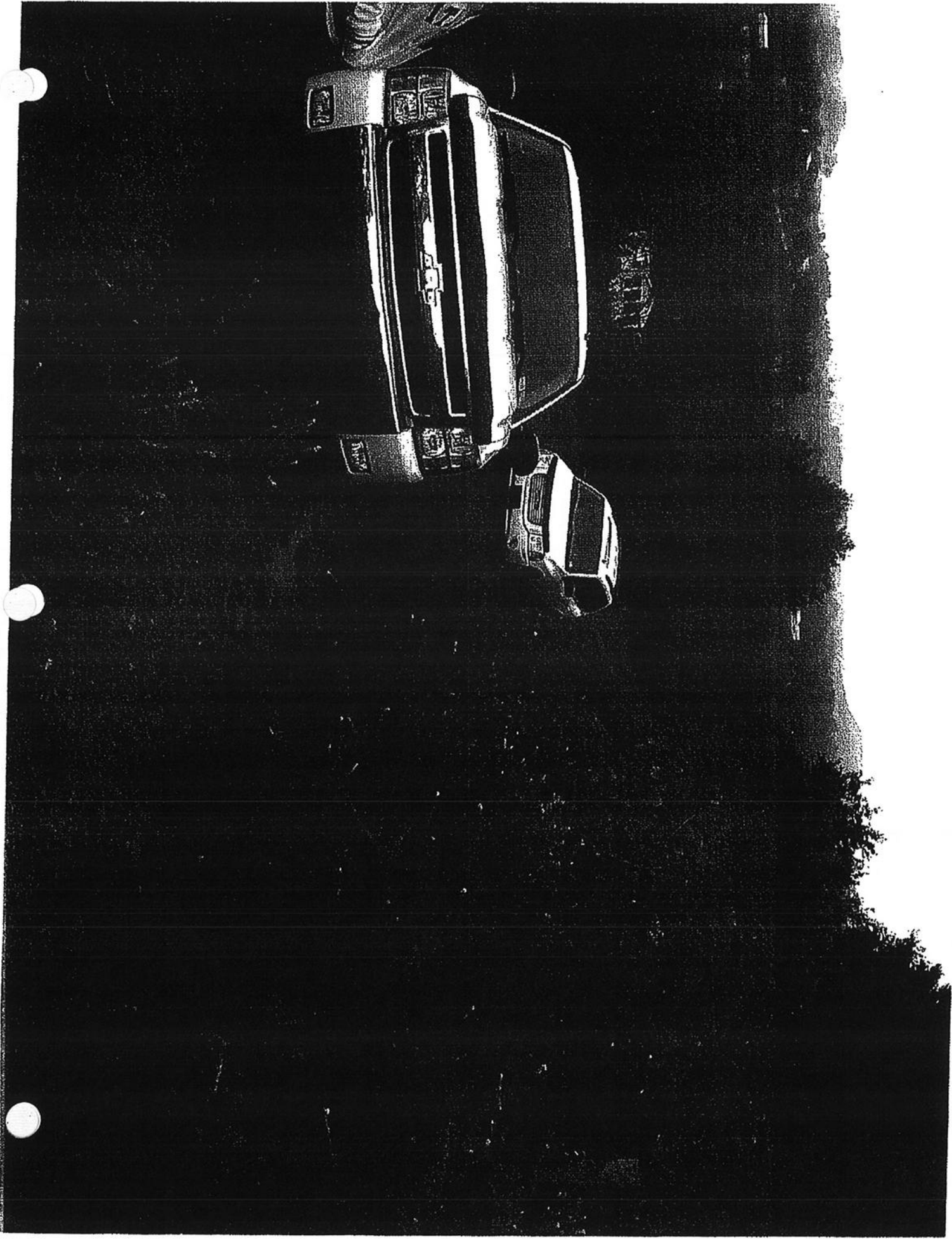


**- Well Ties -**

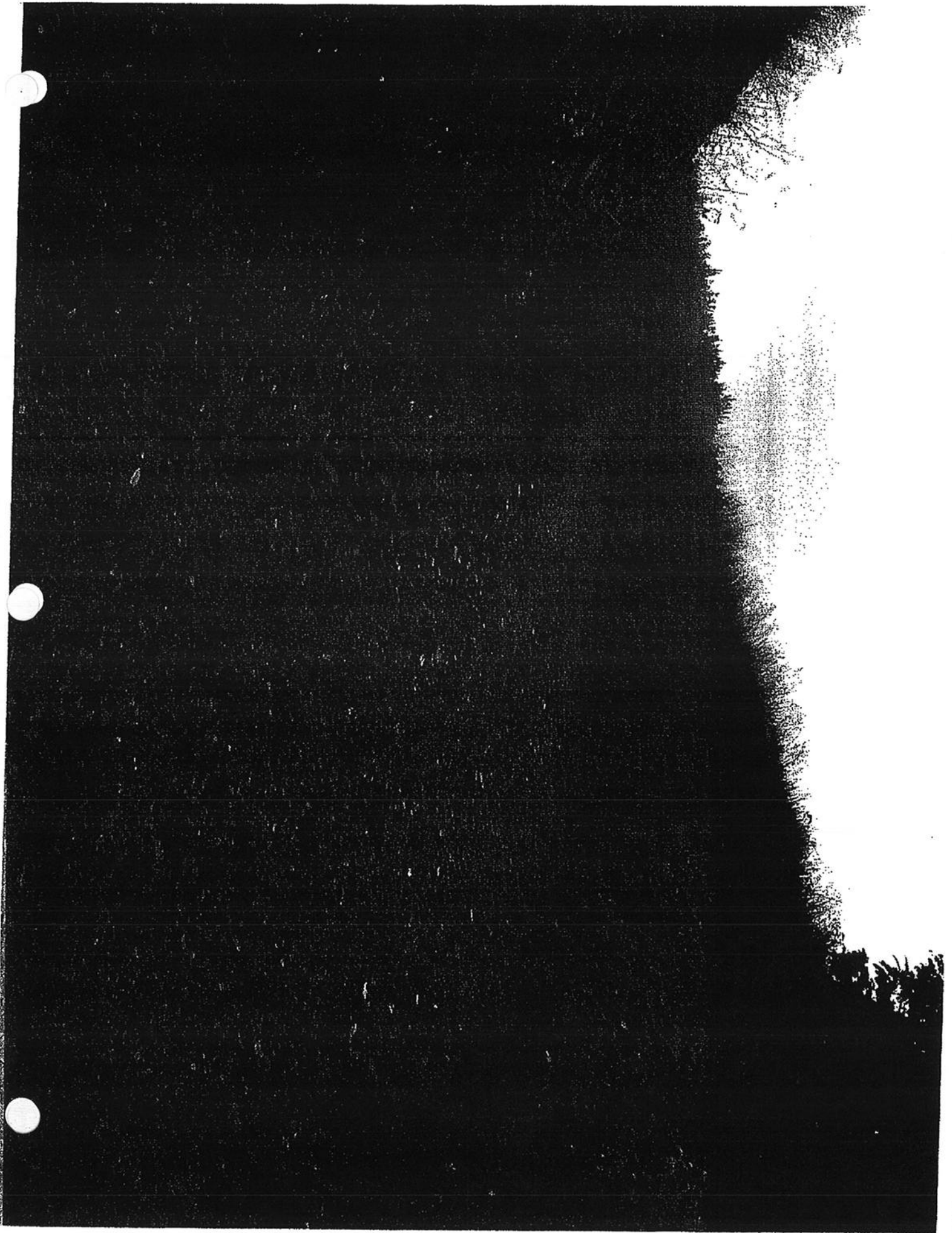
Cor.(A) — Cor.(B) = S 00°20'35" W 1,908.8'  
 Cor.(A) — Well No. 1 = S 48°44'25" W 1,002.8'  
 Cor.(B) — Well No. 1 = N 71°42'05" W 788.3'  
 P/L (C) — Well No. 1 = S 11°39'40" W 125.0'  
 P/L (D) — Well No. 1 = N 61°43'25" W 614.4'  
 P/L (E) — Well No. 1 = N 11°52'50" E 581.7'  
 P/L (F) — Well No. 1 = S 74°38'40" E 427.5'

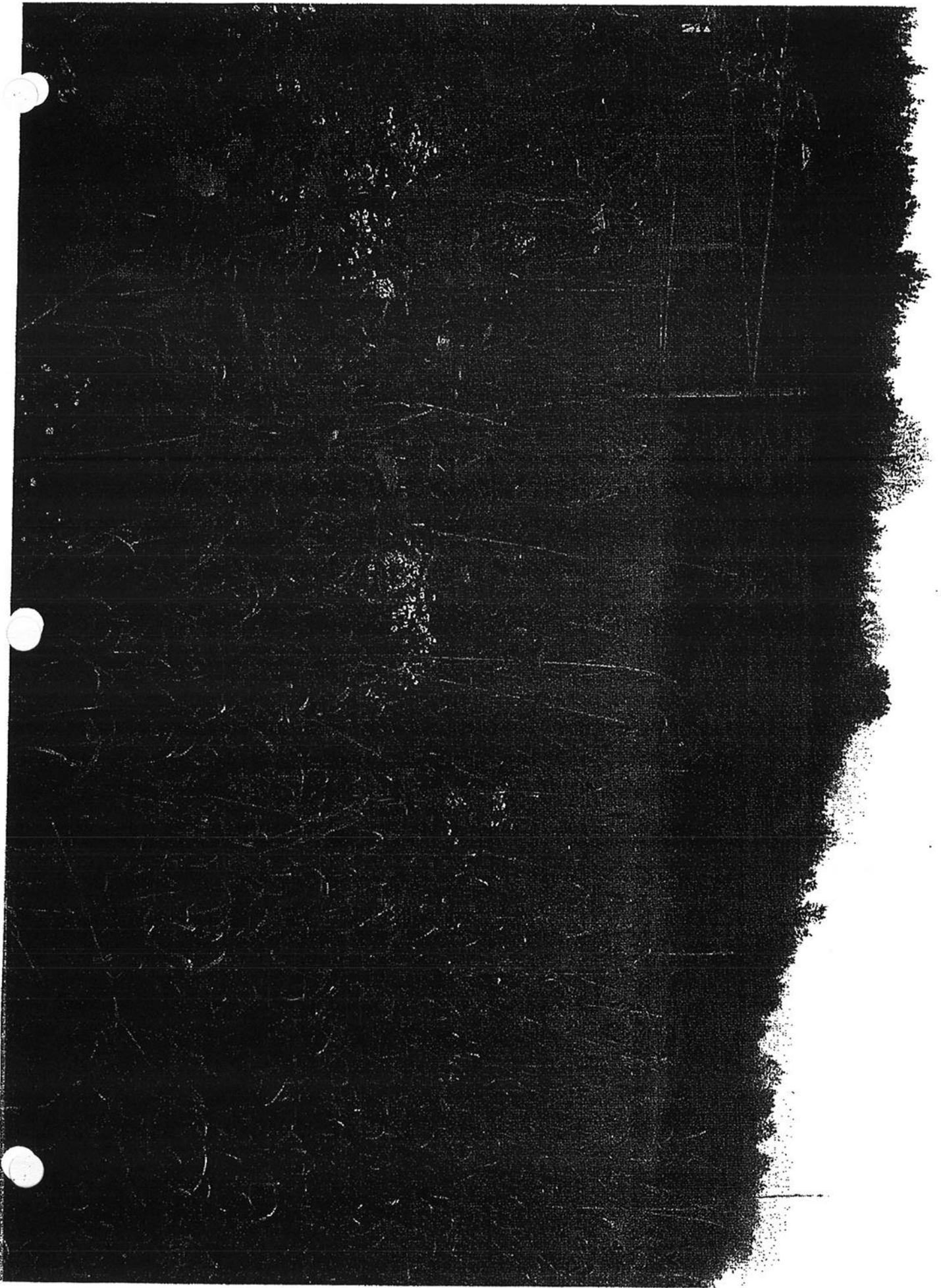
Surveyor or Engineer <b>Lionel Alexander</b>	Phone # <b>(814) 371-5578</b>	Dwg. # <b>JN336411 Well 1 Plat</b>	Date <b>August 02, 2011</b>	Scale <b>1" = 500'</b>	Tract Acreage <b>23.8 Acres</b>
Lat. & Long Metadata Method <b>GPS</b> Accuracy Submeter ft. Datum <b>NAD 83</b>			Elevation Metadata Method <b>Topo</b> Accuracy <b>10' ±</b> ft. Datum <b>NGVD 88</b> Survey Date <b>June 15, 2011</b>		
Applicant / Well Operator Name <b>Windfall Oil &amp; Gas</b>		DEP ID#		Well (Farm) Name <b>Frank &amp; Susan Zelman</b>	
Address <b>63 Hill Street, Falls Creek, Pa.</b>		County - Code <b>Clearfield - 17</b>		Municipality <b>Brady Township</b>	
Surface Landowner / Lessor <b>Frank &amp; Susan Zelman</b>		USGS 7 1/2 Quadrangle Map Name <b>Luthersburg</b>		Map Section <b>4</b>	
Target Formation(s) <b>Chert / Oriskany</b>		Angle & Course of Deviation (Drilling) <b>Vertical</b>		Anticipated Total Depth TVD <b>7,500'</b> TMD <b>7,500'</b>	
Surface Owner or Water Purveyor within 1,000' (Continued)					
(1) = Rita M. & David W. Barr		S 55°54' E 772' ± - Well			
(2) = John M. & Sue A. Barr		S 33°39' E 715' ± - Well			
(3) = Carol J. & Steve Steinfelser		S 53°38' W 881' ± - Well			
(4) = Frank & Susan Zelman		S 80°21' W 826' ± - Well			

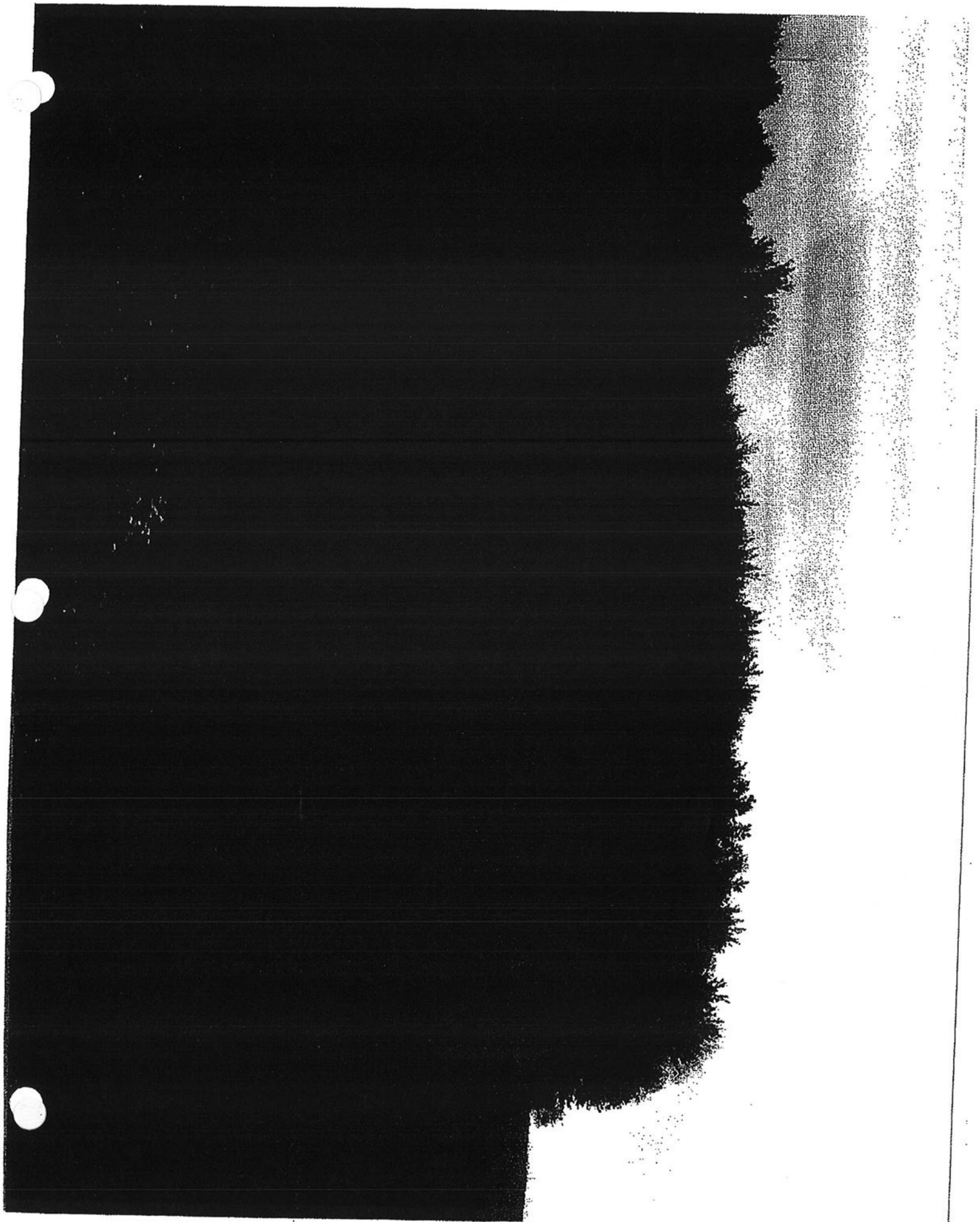
- List Continued - See Above On Well Plat -





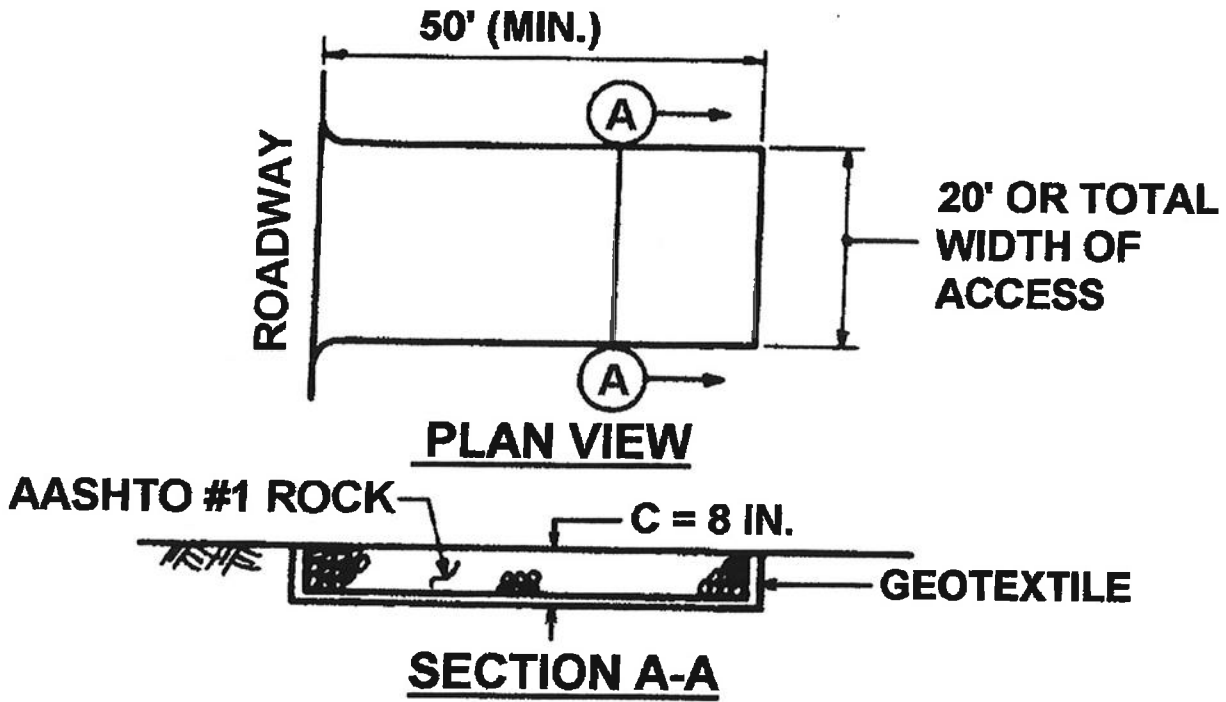






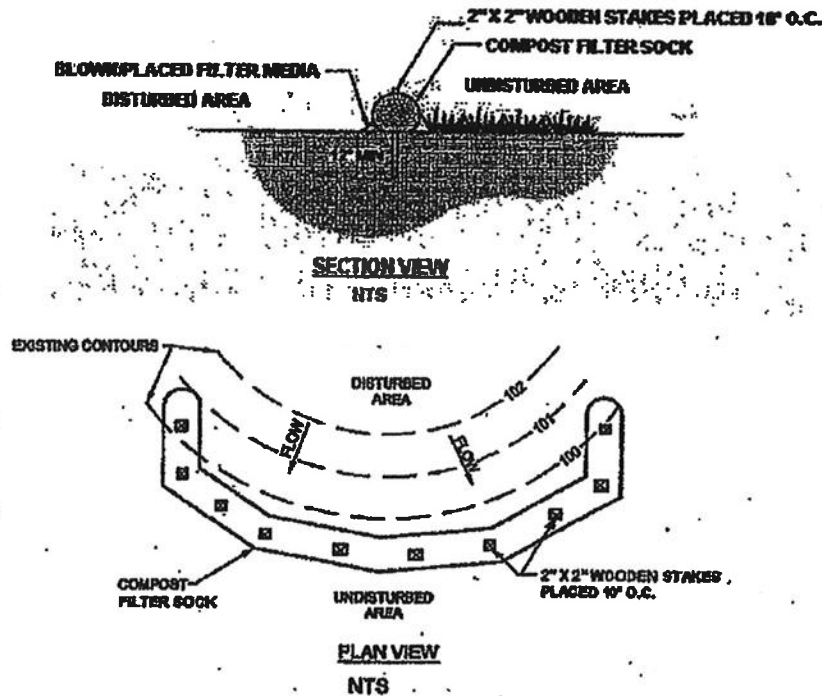


**STANDARD CONSTRUCTION DETAIL #16  
Rock Construction Entrance**



**MAINTENANCE:** Rock Construction Entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. At the end of each construction day, all sediment deposited on paved roadways shall be removed and returned to the construction site.

**J. COMPOST FILTER SOCK**



Compost shall meet the following standards:

Organic Matter Content	80% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS Maximum

Compost Filter Sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up slope at 45 degrees to the main sock alignment. Maximum slope length above any 18" diameter sock shall not exceed that shown on above table for reinforced silt fence. Maximum slope length for a 24" diameter sock shall not exceed that for super silt fence.

Traffic shall not be permitted to cross filter socks.

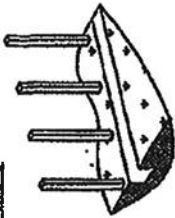
Accumulated Sediment shall be removed when it reaches 1/2 the above ground height of the sock and disposed in the manner described elsewhere in the plan.

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Biodegradable filter sock shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

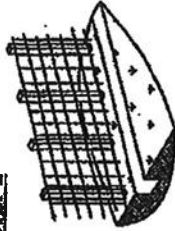
Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

STEP 1



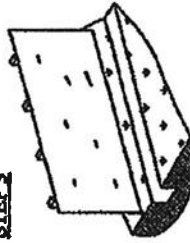
SET SUPPORT POLES AND EXCAVATE A MINIMUM 6 INCH TRENCH TO SERVE AS A TOE-IN FOR THE FABRIC. POLES SHOULD BE EMBEDDED 18" DEEP.

STEP 2



A FENCING INTERVAL -- WIDE MESH WOOD SLATS, ETC., IF REQUIRED, IS THEN APPLIED TO THE POLES, THIS SUPPORT SYSTEM ACTS AS THE FRAMEWORK FOR THE FILTER FABRIC.

STEP 3



FASTEN A SUFFICIENTLY WIDE STRIP OF FILTER FABRIC TO THE FENCE WITH STAPLES OR NAILS. LEAVE A 12-18 INCH WIDE BOTTOM STRIP TO LINE THE TRENCH.

STEP 4



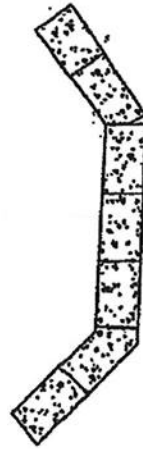
ROCKFILL THE LINED TRENCH TO COMPLETE THE TOE-IN

#4 REBAR OR WOOD STAKES - 2" x 2" x 5'



2 FT.

IMBED BALES IN EARTH APPROX. 4"

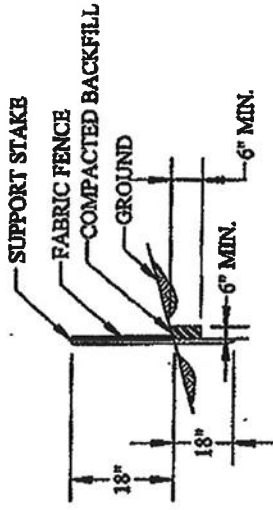


BARRIER DESIGN TO SUIT FIELD APPLICATION

HAY OR STRAW SEDIMENT BARRIER



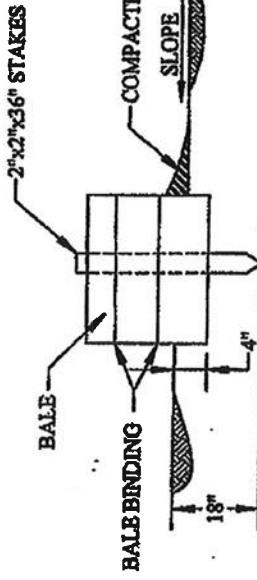
JOINING FENCE SECTIONS



STAKES SPACED @ 8' MAXIMUM. USE 2" x 2" WOOD OR EQUIVALENT STAKES.

FILTER FABRIC FENCE MUST BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FT. UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.

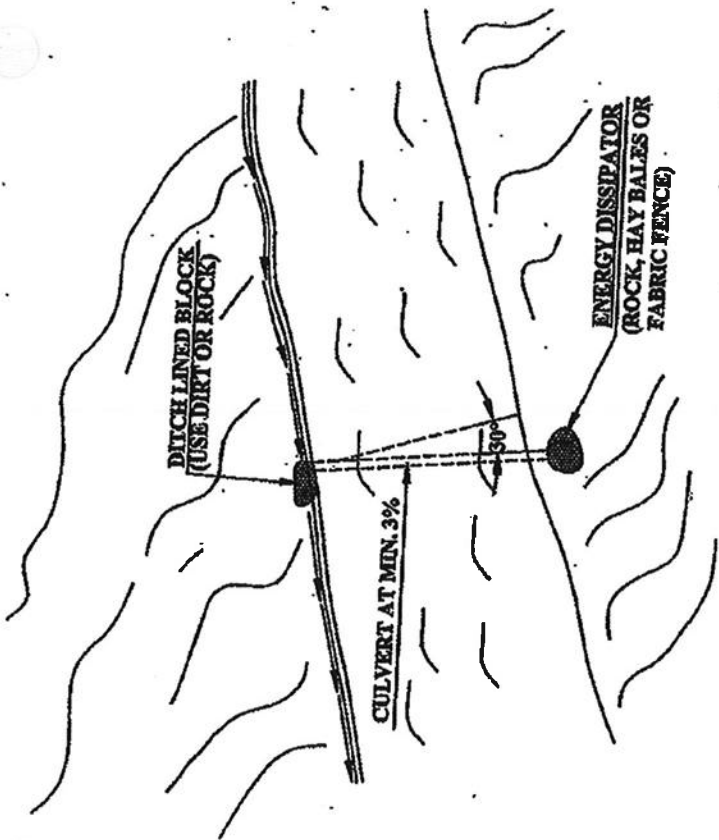
SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.



STRAW BALE BARRIERS SHOULD NOT BE USED FOR MORE THAN 3 MONTHS

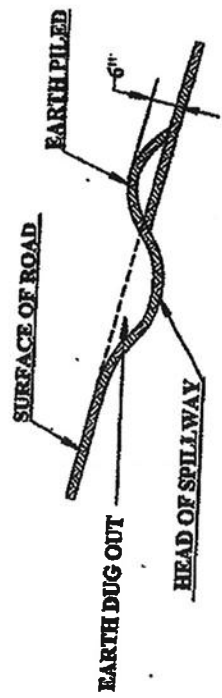
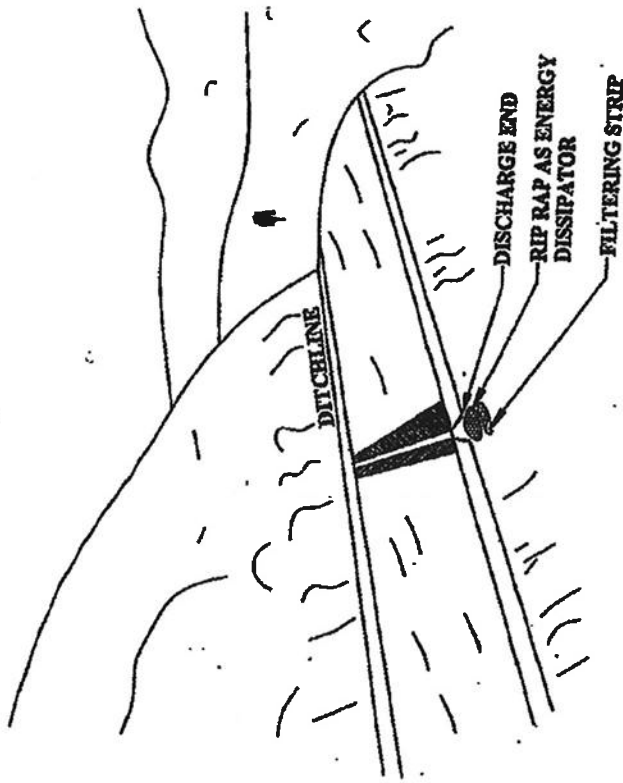
STRAW BALE BARRIERS SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FT. UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.



**CULVERT SPACING**

- 2% - 500'
- 3% - 400'
- 4% - 350'
- 5-6% - 300'
- 7-8% - 250'
- 9-11% - 200'
- 12-13% - 150'
- 14% - 100'



**DRAINAGE DIP SPACING**

ROAD GRADE PERCENT	SPACING FEET
2	250
5	135
10	80
15	60
20	45
25 (AND GREATER)	40

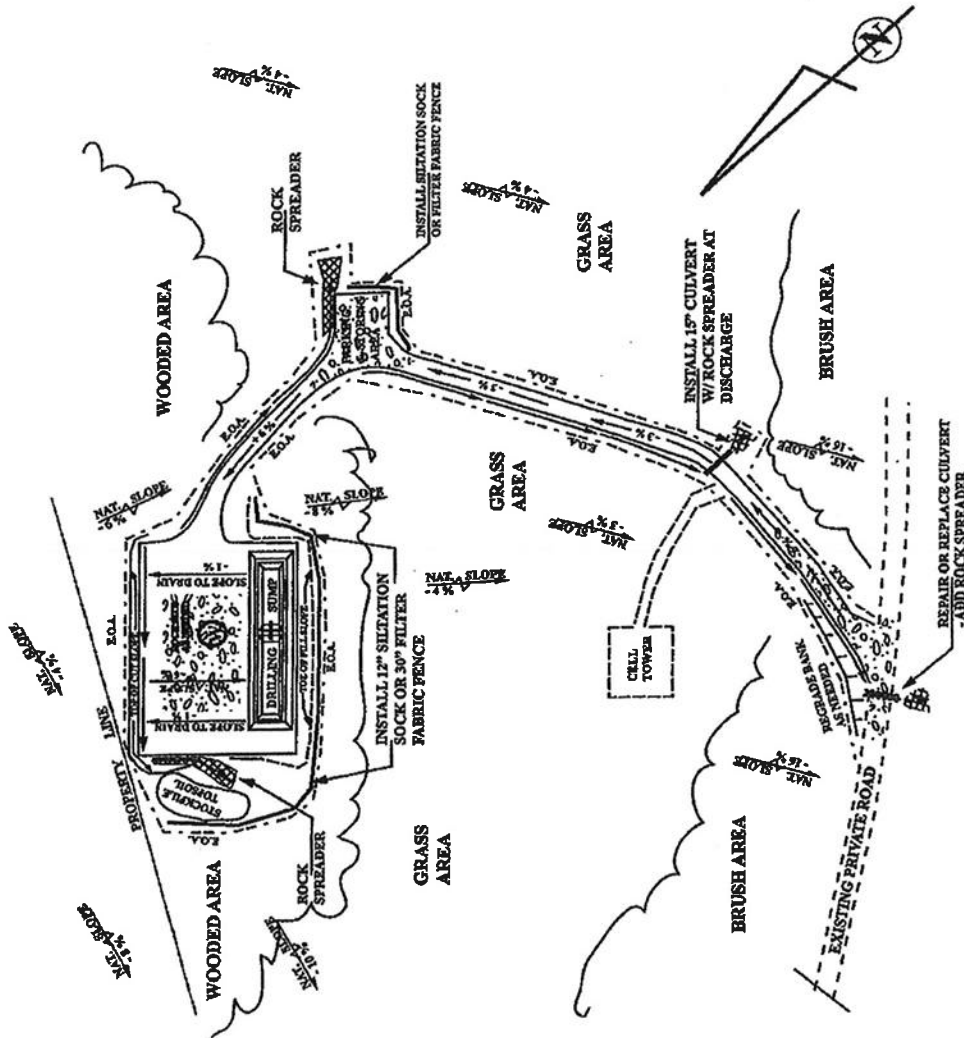
**DETAILS - A  
CULVERT INSTALLATION**

**STAGING SEQUENCE:**

1. Prior to any earthmovement activity, all erosion and sediment control devices (BMPs), will be installed.
2. Perform any brushing, grubbing, and/or clearing required.
3. Earthmovement activities will begin with all culverts and drainage facilities installed, as per drawing.
4. All disturbed areas will be stabilized.
5. Well drilling activities will be performed and completed.
6. The well site will be backfilled and all disturbed areas, including the cut and fill slopes, will be immediately seeded and mulched.
7. All BMPs not needed for stabilization, will be removed while all other will remain in place until the site is stabilized.
8. Upon stabilization, all temporary controls will be removed and all permanent control will be maintained

**NOTES:**

1. The well site is located 1325 feet from Penns Run (CWF) through wooded areas with average slopes of 12%.
2. The watershed area above the site is equal to .3 acres.
3. The 24 hr. rainfall frequency for 10 yrs is equal to 4.0 in.
4. The total project area is equal to 2.7 acres.
5. E.O.A. = Extent of Alteration.
6. If water is encountered at the drilling sumps, the drilling sumps will be constructed above ground.
7. All brush and stumps must be within the designated BMPs.
8. Install all BMPs in accordance with proper procedures, including the ends of any culverts and/or drainage ditches.



Prepared for:	<b>WINDFALL OIL &amp; GAS</b>
Project Name:	<b>ZELMAN WELL NO. 1</b>
Location:	<b>Brady Township, Clearfield County</b>
Prepared by:	<b>Environmental Wells Development, Inc.</b>
Scale: 1" = 100'	<b>Date: March 15, 2012</b>

# ALPHA 2278W

## CORROSION INHIBITOR

### DESCRIPTION

Alpha 2278W Corrosion Inhibitor is an alkyl phosphate ester/alkyl pyridine quaternary ammonium chloride. It is an excellent corrosion preventive for use in foam or air mist drilling and does not normally offset drilling fluid properties.

Alpha 2278W Corrosion Inhibitor is for drilling water-based systems. It is designed for oxygen, carbon dioxide, and hydrogen sulfide corrosion prevention. It is also effective against inorganic and organic salts.

Alpha 2278W Corrosion Inhibitor is an anodic inhibitor and controls general pitting and corrosion. It is a cathodic inhibitor for acid attack and embrittlement.

### ADVANTAGES

- Minimizes corrosion rates.
- Effective against CO<sub>2</sub>, H<sub>2</sub>S, and oxygen corrosion.
- Effective against inorganic and organic salts.
- A cathodic inhibitor for acid attack.
- An anodic inhibitor for general pitting and corrosion.

### MIXING PROCEDURE

Alpha 2278W Corrosion Inhibitor is 24% active solution in water. It is ready for field use.

### USAGE

For Mist Drilling, add Alpha 2278W Corrosion Inhibitor at a rate of 4 gallons/hour to fresh water mist tank.

For Assist Drilling, add Alpha 2278W Corrosion Inhibitor at a rate of 4 gallons/hour to mud tank.

In extremely corrosive environments, pour 1.5 to 2 gallons per joint of Alpha 2278W Corrosion Inhibitor down to about 5000 feet. Below 5000 feet, add 3 to 3.5 gallons per joint of Alpha 2278W Corrosion Inhibitor.

Run corrosion rings and inspect external collar and upset areas.

### PHYSICAL PROPERTIES

Appearance.....Dark, Red Liquid  
pH, Neat.....7 to 8.5  
Specific Gravity.....1.098 ± 0.015  
Density.....9.02 to 9.27 lbs/gal  
Flash Point.....No Data  
Solubility in Water.....Dispersible



**CLEARWATER**  
Engineered Chemistry™

Engineered Chemistry™

## Material Safety Data Sheet

# ALPHA 2278W

HEALTH	2
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

### 1. Product and Company Identification

<b>Material name</b>	ALPHA 2278W
<b>Patent Number</b>	Not available
<b>Revision date</b>	July-10-2008
<b>Version No.</b>	1
<b>CAS #</b>	Mixture
<b>Product use</b>	Corrosion Inhibitor
<b>Manufacturer information</b>	Weatherford Engineered Chemistry 4420 South Flores Road Elmendorf, TX 78112 US CHEMTREC 1-800-424-9300/703-527-3887
<b>Emergency</b>	CHEMTREC 1-800-424-9300/703-527-3887
<b>Supplier information</b>	Clearwater International L.L.C. 4420 South Flores Rd. Elmendorf, TX 78112 US

### 2. Hazards Identification

<b>Emergency overview</b>	<b>WARNING</b>  May be ignited by heat, sparks or flames. Prolonged exposure may cause chronic effects. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Eyes</b>	Do not get this material in contact with eyes.
<b>Skin</b>	Do not get this material in contact with skin.
<b>Inhalation</b>	Prolonged inhalation may be harmful. Do not breathe dust/fume/gas/mist/vapors/spray.
<b>Ingestion</b>	May cause delayed lung damage. Do not ingest. Components of the product may be absorbed into the body by ingestion.
<b>Target organs</b>	Central nervous system. Eyes. Lungs. Respiratory system. Skin.
<b>Chronic effects</b>	Shortness of breath. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. May cause delayed lung damage.
<b>Signs and symptoms</b>	Discomfort in the chest. Shortness of breath. Narcosis. Decrease in motor functions. Behavioral changes. Cough.
<b>Potential environmental effects</b>	May cause long-term adverse effects in the environment.



...A Weatherford Company

Weatherford products and services are subject to the Company's standard terms and conditions, available on request or at [www.weatherford.com](http://www.weatherford.com). For more information contact an authorized Weatherford representative. Unless noted otherwise, trademarks and service marks herein are the property of Weatherford. Specifications are subject to change without notice.





### 3. Composition / Information on Ingredients

Components	CAS #	Percent
Ethylene Glycol	107-21-1	30 - 60

### 4. First Aid Measures

**First aid procedures**

<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
<b>Skin contact</b>	Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse.
<b>Inhalation</b>	Move to fresh air. Do not use mouth-to-mouth method if victim inhaled the substance. Call a physician if symptoms develop or persist.
<b>Ingestion</b>	Rinse mouth. Do not induce vomiting without medical advice. Do not use mouth-to-mouth method if victim ingested the substance. Get medical attention immediately.

**Notes to physician**

**General advice**

Symptoms may be delayed.  
Call a physician if symptoms develop or persist. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire Fighting Measures

**Extinguishing media**

**Suitable extinguishing media** Water. Water spray. Water fog. Alcohol foam. Polymer foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use a solid water stream as it may scatter and spread fire.

**Protection of firefighters**

**Protective equipment and precautions for firefighters** Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Move containers from fire area if you can do it without risk. Do not scatter spilled material with high pressure water streams. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

### 6. Accidental Release Measures

**Personal precautions**

Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away. Stay upwind. Keep out of low areas.

**Methods for containment**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewers, basements or confined areas.





**Methods for cleaning up**

Should not be released into the environment.

**Large Spills:** Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

**Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

**7. Handling and Storage**

**Handling**

Do not handle or store near an open flame, heat or other sources of ignition. Do not breathe vapors or spray mist. Avoid release to the environment. Avoid prolonged exposure.

**Storage**

Keep tightly closed in a dry, cool and well-ventilated place. Store in accordance with local/regional/national/international regulation.

**8. Exposure Controls / Personal Protection**

**Exposure limits**

**ACGIH**

**Components**

**CAS #**

**TWA**

**STEL**

**Ceiling**

Ethylene Glycol

107-21-1

Not established

Not established

100 mg/m3

**Engineering controls**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

**Eye / face protection**

Wear chemical goggles.

**Skin protection**

Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Protective gloves. Impervious gloves.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use.

**General hygiene considerations**

When using do not eat or drink. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical & Chemical Properties**

**Appearance**

Cloudy.

**Color**

brown

**Odor**

Not available.

**Odor threshold**

Not available

**Physical state**

Liquid.

**Form**

Liquid.

**pH**

7 - 9

**Melting point**

24.8 °F (-4.06 °C) estimated





**CLEARWATER™**

Engineered Chemistry™

Engineered Chemistry™

<b>Freezing point</b>	Not available
<b>Boiling point</b>	273.2 °F (134 °C) estimated
<b>Flash point</b>	201 °F (93.9 °C)
<b>Evaporation rate</b>	Not available
<b>Flammability</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available
<b>Flammability limits in air, lower, % by volume</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Heavier than Air
<b>Specific gravity</b>	1.14 - 1.18
<b>Relative density</b>	1.1599 g/cm <sup>3</sup> estimated
<b>Solubility (water)</b>	100
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	748.4 °F (398 °C) estimated
<b>Decomposition temperature</b>	Not available
<b>VOC</b>	30 % estimated

### 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable at normal conditions.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatible materials</b>	Amines. Isocyanates. Strong oxidizing agents. Strong acids. Caustics.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

### 11. Toxicological Information

<b>Acute effects</b>	Acute LD50: 13333 mg/kg estimated, Rat, Oral
<b>Component analysis - LD50</b>	
<b>Toxicology Data - Selected LD50s and LC50s</b>	
Ethylene Glycol	107-21-1 Oral LD50 Rat: 4000 mg/kg; Dermal LD50 Rabbit: 9530 µL/kg
<b>Sensitization</b>	Not expected to be hazardous by OSHA criteria.
<b>Chronic effects</b>	Hazardous by OSHA criteria. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.
<b>Carcinogenicity</b>	Not expected to be hazardous by OSHA criteria.
<b>ACGIH - Threshold Limit Values - Carcinogens</b>	
Ethylene Glycol	107-21-1 A4 - Not Classifiable as a Human Carcinogen
<b>Neurological effects</b>	Hazardous by OSHA criteria.
<b>Further information</b>	Symptoms may be delayed.



...A Weatherford Company



## 12. Ecological Information

**Ecotoxicity**

Components of this product have been identified as having potential environmental concerns.

**Ecotoxicity - Freshwater Algae Data**

Ethylene Glycol 107-21-1 96 Hr EC50 *Selenastrum capricornutum*: 6500-1300 mg/L

**Ecotoxicity - Freshwater Fish Species Data**

Ethylene Glycol 107-21-1 96 Hr LC50 *Oncorhynchus mykiss*: 41000 mg/L; 96 Hr LC50 *Lepomis macrochirus*: 27500 mg/L; 96 Hr LC50 *Oncorhynchus mykiss*: 40761 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 49000 mg/L [static]; 96 Hr LC50 *Poecilia reticulata*: 16000 mg/L [static]

**Ecotoxicity - Microtox Data**

Ethylene Glycol 107-21-1 30 min EC50 *Photobacterium phosphoreum*: 620.0 mg/L; 30 min EC50 *Photobacterium phosphoreum*: 620 mg/L; 16 Hr EC50 *Pseudomonas putida*: 10000 mg/L

**Ecotoxicity - Water Flea Data**

Ethylene Glycol 107-21-1 48 Hr EC50 water flea: 46300 mg/L

**Environmental effects**

**Ecotoxicity - Freshwater Algae Data**

Ethylene Glycol 107-21-1 96 Hr EC50 *Selenastrum capricornutum*: 6500-1300 mg/L

**Ecotoxicity - Freshwater Fish Species Data**

Ethylene Glycol 107-21-1 96 Hr LC50 *Oncorhynchus mykiss*: 41000 mg/L; 96 Hr LC50 *Lepomis macrochirus*: 27500 mg/L; 96 Hr LC50 *Oncorhynchus mykiss*: 40761 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 49000 mg/L [static]; 96 Hr LC50 *Poecilia reticulata*: 16000 mg/L [static]

**Ecotoxicity - Microtox Data**

Ethylene Glycol 107-21-1 30 min EC50 *Photobacterium phosphoreum*: 620.0 mg/L; 30 min EC50 *Photobacterium phosphoreum*: 620 mg/L; 16 Hr EC50 *Pseudomonas putida*: 10000 mg/L

**Ecotoxicity - Water Flea Data**

Ethylene Glycol 107-21-1 48 Hr EC50 water flea: 46300 mg/L

## 13. Disposal Considerations

**Disposal instructions**

Do not allow this material to drain into sewers/water supplies. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

## 14. Transport Information

**Department of Transportation (DOT) Requirements**

Not regulated as hazardous goods.







**CLEARWATER™**  
Engineered Chemistry™

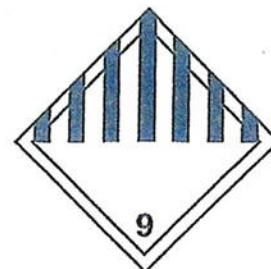
Engineered Chemistry™

**Department of Transportation (DOT) Requirements**

**Bulk**

**Basic shipping requirements:**

<b>Proper shipping name</b>	Environmentally hazardous substances, liquid, n.o.s. (ETHYLENE GLYCOL)
<b>Hazard class</b>	9
<b>UN number</b>	UN3082
<b>Packing group</b>	III
<b>Additional information:</b>	
<b>Special provisions</b>	8, 146, IB3, T4, TP1, TP29
<b>Packaging exceptions</b>	155
<b>Packaging non bulk</b>	203
<b>Packaging bulk</b>	241



**Canadian Transportation of Dangerous Goods (TDG) Requirements**

Not regulated as hazardous goods.

**IMDG**

Not regulated as dangerous goods.

**IATA**

Not regulated as hazardous goods.

**15. Regulatory Information**

**Labelling**

**Contains** Ethylene Glycol

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

Ethylene Glycol 107-21-1 1.0 % de minimis concentration

**Occupational Safety and Health Administration (OSHA)**

**29 CFR 1910.1200 hazardous chemical** Yes

**CERCLA (Superfund) reportable quantity**

Ethylene Glycol: 5000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 302 extremely hazardous substance** No  
**Section 311 hazardous chemical** Yes



...A Weatherford Company

Weatherford products and services are subject to the Company's standard terms and conditions, available on request or at [www.weatherford.com](http://www.weatherford.com). For more information contact an authorized Weatherford representative. Unless noted otherwise, trademarks and service marks herein are the property of Weatherford. Specifications are subject to change without notice.



**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**International regulations**

**Canada - WHMIS - Ingredient Disclosure List**

Ethylene Glycol 107-21-1 1 %

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**U.S. - Massachusetts - Right To Know List**

Ethylene Glycol 107-21-1 Present

**U.S. - Minnesota - Hazardous Substance List**

Ethylene Glycol 107-21-1 Present (particulate and vapor)

**U.S. - New Jersey - Right to Know Hazardous Substance List**

Ethylene Glycol 107-21-1 sn 0878

**U.S. - Pennsylvania - RTK (Right to Know) List**

Ethylene Glycol 107-21-1 Environmental hazard

**U.S. - Rhode Island - Hazardous Substance List**

Ethylene Glycol 107-21-1 Toxic; Flammable

**U.S. - Texas - Effects Screening Levels - Long Term**

Ethylene Glycol 107-21-1 10 ppb ESL (46% Ethylene glycol); 26 µg/m3 ESL (46% Ethylene glycol)

**U.S. - Texas - Effects Screening Levels - Short Term**

Ethylene Glycol 107-21-1 100 ppb ESL (46% ethylene glycol); 260 µg/m3 ESL (46% ethylene glycol)

**16. Other Information**

**HMIS® ratings**

Health: 2  
Flammability: 1  
Physical hazard: 0  
Personal protection: B

**NFPA ratings**

Health: 2  
Flammability: 1  
Instability: 0

**Prepared by**

Naser S. Hussaini  
515 Post Oak Blvd  
+1-713-693-7706

**Disclaimer**

THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.



# Alpha 3207

*Packer Fluid Corrosion Inhibitor*

## **DESCRIPTION**

Alpha 3207 is a 23-27% active synergistic blend of organic acid-amine salts in isopropanol and water. It is used as a base for formulating water-soluble corrosion preventives for packer fluids.

## **APPLICATION**

Alpha 3207 can be used to prepare surfactants, corrosion preventives, anti-foulants, and water clarifiers for water flood injection and disposal systems. Alpha 3207 can be used in hydrogen sulfide containing waters to reduce fouling.

Alpha 3207 can be used in concentrated form or diluted with water or alcohol for application purposes.

## **ADVANTAGES**

- Highly cationic amine
- Minimizes corrosion rates
- Functions as a surfactant, water clarifier, & anti-foulant
- Can be used in concentrated form or diluted

## **USEAGE**

Optimum treatment concentration will vary depending upon the specific application. Normal concentration ranges from 100 to 200 ppm.

## **PHYSICAL PROPERTIES**

Appearance.....Light Amber to  
Amber-Orange Liquid  
Activity.....23-27%  
Specific Gravity @ 25°C.....0.94-1.00  
Density @ 25°C.....7.83-8.33lbs/gal  
pH (5% solution in water).....5.0-6.0  
Flash Point, TCC.....14.4°C (58°F)

Solubility, 10% in:

Fresh Water.....Soluble  
Xylene.....Dispersible  
Isopropanol.....Soluble  
Kerosene.....Insoluble



# Material Safety Data Sheet

## ALPHA 3207

HEALTH	2
FLAMMABILITY	4
REACTIVITY	0
PERSONAL PROTECTION	G

24 hr. Emergency Contact (CHEMTREC) US Tel: 1- 800 - 424-9300 - Int'l. Tel. 703 - 527 - 3887

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER: AQUA-CLEAR INC.  
608 VIRGINIA St. EAST  
CHARLESTON W.V. 25301

PRODUCT NAME: ALPHA 3207

PRODUCT USE/CLASS: CORROSION INHIBITOR

MSDS REVISION DATE: 06/15/04

PHONE: 304-343-4792

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	EXPOSURE LIMITS	CAS#	% BY WEIGHT
ISOPROPANOL	ACGIH TLV – 400 ppm TWA , 500 ppm STEL OSHA PEL – 400 ppm TWA,	67-63-0	10-30 %

### 3. HAZARD IDENTIFICATION

**EYE:** Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

**SKIN:** May cause skin irritation. Allergic reactions are possible.

**INGESTION:** This material may be harmful if swallowed. May be irritating to mouth, throat, and stomach. .

**INHALATION:** Prolonged inhalation may be harmful and can cause headaches, dizziness, nausea, anesthesia, narcosis, decreased blood pressure, changes in heart rate and cyanosis. May be irritating to mucous membranes and lung tissue.

**CHRONIC INFORMATION:** None Known

**PRIMARY ROUTE(S) OF ENTRY:** Inhalation, Ingestion

### 4. FIRST AID MEASURES

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation persists.

**SKIN CONTACT:** Wash with soap and water. Get medical attention if irritation develops or persist.

**INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

**INGESTION:** Place victim on left side with head down to prevent aspiration into lungs. Induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

### 5. FIRE FIGHTING MEASURES

FLASH POINT: 70 F  
(TAGLIABUE CLOSED CUP)

LOWER EXPLOSIVE LIMIT: N.D.  
UPPER EXPLOSIVE LIMIT: N.D.

# Material Safety Data Sheet

## ALPHA 3207

**AUTOIGNITION TEMPERATURE:** N.D.

**EXTINGUISHING MEDIA:** ALCOHOL FOAM    CO2    DRY CHEMICAL

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Can release vapors that form explosive mixtures at temperatures at or above the flash point. Empty containers retain product residue (liquid and/or vapor) and can be dangerous.

**SPECIAL FIRE FIGHTING PROCEDURES:** Containers can build up pressure if exposed to heat (fire). As in any fire, wear a self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Apply alcohol-type foam or all purpose foam by manufacturers recommended techniques for large fires. Use carbon dioxide or dry chemical for small fires. Use water spray to keep containers cool.

### 6. ACCIDENTAL RELEASE MEASURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Extinguish any possible ignition source until the area is determined to be free from fire or explosion hazard. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. (See exposure controls / personal protection section) Spilled material should be disposed of according to applicable regulations.

### 7. HANDLING AND STORAGE

**HANDLING:** Handle all chemicals with care. Ground and bond containers when transferring materials.

**STORAGE:** Keep away from heat, sparks, and flames. Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Local exhaust ventilation may be necessary to control any air contaminants to within their exposure limits.

**RESPIRATORY PROTECTION:** No protection needed under normal use and conditions. Use a NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge when airborne concentrations are expected to exceed exposure limits. Protection by air purifying respirators is limited.

**SKIN PROTECTION:** When contact is likely wear chemical resistant gloves and boots.

**EYE PROTECTION:** Wear safety glasses with side shields or goggles.

**OTHER PROTECTIVE EQUIPMENT:** Emergency eye wash stations and deluge showers should be available in the work area.

**HYGIENIC PRACTICES:** Wash hands before eating. Use only with adequate ventilation. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Dark amber

**ODOR:** Sl alcohol

**BOILING POINT (RANGE):** N.D.

**FREEZE POINT:** N.D.

**VAPOR DENSITY:** Heavier than air

**VAPOR PRESSURE:** N.D.

**PHYSICAL STATE:** Liquid

**SOLUBILITY IN WATER:** Soluble

**PH (AS IS):** 4.5-6.0

**SPECIFIC GRAVITY:** 0.94-1.00

### 10. STABILITY AND REACTIVITY DATA

**CONDITIONS TO AVOID:** Avoid temperature extremes. Excessive heat causes the vapor pressure to increase rapidly.

**INCOMPATIBILITY:** Avoid contact with strong oxidizers.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of carbon and nitrogen.

# Material Safety Data Sheet

## ALPHA 3207

**HAZARDOUS POLYMERIZATION:** Will not occur under normal use and storage conditions.

**CHEMICAL STABILITY:** This product is stable under normal storage conditions.

### 11. TOXICOLOGICAL INFORMATION

**ORAL:** No product information is available.

**DERMAL:** No product information is available.

**INHALATION:** No product information is available.

### 12. ECOLOGICAL INFORMATION

**ECOTOXICITY:** No product information is available.

**CHEMICAL FATE INFORMATION:** No product information is available.

### 13. DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL:** Consult local, state, or federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.

**RCRA STATUS:** D001 -Characteristic of ignitability

### 14. TRANSPORTATION INFORMATION

#### (NON-BULK SHIPMENTS)

**D.O.T. PROPER SHIPPING NAME:** Isopropanol Solution

**D.O.T. TECHNICAL NAME:**

**D.O.T. HAZARD CLASS:** 3

**D.O.T. UN NUMBER:** UN1219

**HAZARD SUBCLASS:** N/A

**PACKING GROUP:** II

**RESP. GUIDE PAGE:** 129

#### (BULK SHIPMENTS)

**D.O.T. PROPER SHIPPING NAME:** Isopropanol Solution

**D.O.T. TECHNICAL NAME:**

**D.O.T. HAZARD CLASS:** 3

**D.O.T. UN NUMBER:** UN1219

**HAZARD SUBCLASS:** N/A

**PACKING GROUP:** II

**RESP. GUIDE PAGE:** 129

**T.D.G. PROPER SHIPPING NAME:** Isopropanol Solution

**T.D.G. TECHNICAL NAME:**

**T.D.G. HAZARD CLASS:** 3

**T.D.G. UN NUMBER:** UN1219

**HAZARD SUBCLASS:** N/A

**PACKING GROUP:** II

**RESP. GUIDE PAGE:** 129

**IMDG PROPER SHIPPING NAME:** Isopropanol Solution

**IMDG TECHNICAL NAME:**

**IMDG HAZARD CLASS:** 3.2

**IMDG UN NUMBER:** UN1219

**HAZARD SUBCLASS:** N/A

**PACKING GROUP:** II

**EmS No:** F-E, S-C

### 15. REGULATORY INFORMATION

#### CERCLA - SARA HAZARD CATEGORY:

**SECTION 311/312:** This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

**IMMEDIATE HEALTH HAZARD    FIRE HAZARD**

**SARA SECTION 313:** This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

# Material Safety Data Sheet

## ALPHA 3207

COMPONENT

CAS#

% BY WEIGHT

### TSCA STATUS:

All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.

### INTERNATIONAL REGULATIONS:

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B-2, D-2B

### CANADIAN ENVIRONMENTAL PROTECTION ACT:

All components of this product are listed on the Canadian Domestic Substance List (DSL).

### 16. OTHER INFORMATION

HMIS RATING – HEALTH: 2      FLAMMABILITY: 4      REACTIVITY: 0      PERSONAL PROTECTIVE RATING: G

LEGEND: N.A. – NOT APPLICABLE, N.E. - NOT ESTABLISHED, N.D. – NOT DETERMINED

THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.



**Weatherford**

**Material Safety Data Sheet**

**FE OXCLEAR**

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

**1. Product and Company Identification**

<b>Material name</b>	<b>FE OXCLEAR</b>
<b>Patent Number</b>	Not available
<b>Revision date</b>	September-01-2009
<b>Version No.</b>	2
<b>CAS #</b>	Mixture
<b>Product use</b>	Scavenger
<b>Manufacturer information</b>	WEATHERFORD® ENGINEERED CHEMISTRY® 4420 South Flores Road Elmendorf , TX 78112 US CHEMTREC 1-800-424-9300 CHEMTREC INT'L 001-703-527-3887
<b>Emergency</b>	CHEMTREC 1-800-424-9300 CHEMTREC INT'L 001-703-527-3887
<b>Supplier information</b>	WEATHERFORD® ENGINEERED CHEMISTRY® 515 Post Oak Blvd. Houston, TX 77027 US
<b>Supplier emergency telephone number(s)</b>	Chemtrec 800-424-9300 Int'l 703-527-3887

**2. Hazards Identification**

<b>Emergency overview</b>	<b>WARNING</b>  Causes skin and eye burns. Corrosive material. Harmful by inhalation, in contact with skin and if swallowed. Vapors may be irritating to eyes, nose, throat, and lungs. Vapors may cause dizziness or suffocation. May cause breathing disorders and lung damage. Harmful to aquatic organisms. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Skin contact. Eye contact. Ingestion.
<b>Eyes</b>	Do not get this material in contact with eyes. This product causes eye burns. Risk of serious damage to eyes.
<b>Skin</b>	Do not get this material in contact with skin. Causes skin burns. Irritating to skin.



...A Weatherford Company

Weatherford® products and services are subject to the Company's standard terms and conditions, available on request or at [www.weatherford.com](http://www.weatherford.com). For more information contact an authorized Weatherford® representative. Unless noted otherwise, trademarks and service marks herein are the property of Weatherford®. Specifications are subject to change without notice.





**Methods for cleaning up**

Should not be released into the environment.

**Large Spills:** Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

**Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

**7. Handling and Storage**

**Handling**

Use only with adequate ventilation. Avoid release to the environment. Wash thoroughly after handling. Avoid prolonged exposure.

**Storage**

Store in a closed container away from incompatible materials. Store in accordance with local/regional/national/international regulation.

**8. Exposure Controls / Personal Protection**

**Engineering controls**

Ensure adequate ventilation, especially in confined areas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower nearby.

**Personal protective equipment**

**Eye / face protection**

Do not get this material in contact with eyes. Wear chemical goggles. Face-shield.

**Skin protection**

Do not get this material in your eyes, on your skin, or on your clothing. Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Impervious gloves.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. A NIOSH- approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

**General hygiene considerations**

Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using do not eat or drink. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical & Chemical Properties**

<b>Appearance</b>	Liquid.
<b>Color</b>	Yellow
<b>Odor</b>	Sulfur dioxide
<b>Odor threshold</b>	Not available
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>pH</b>	Not available
<b>Melting point</b>	Not available
<b>Freezing point</b>	Not available
<b>Boiling point</b>	180 °F (82.2 °C)





## 14. Transport Information

### Department of Transportation (DOT) Requirements

#### Basic shipping requirements:

Proper shipping name	BISULFITES, AQUEOUS SOLUTION, N.O.S. (Ammonium bisulfite)
Hazard class	8
UN number	UN2693
Packing group	III
<b>Additional information:</b>	
Special provisions	IB3, T7, TP1, TP28
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241
ERG number	154



### Department of Transportation (DOT) Requirements

#### Bulk

#### Basic shipping requirements:

Proper shipping name	BISULFITES, AQUEOUS SOLUTION, N.O.S. (Ammonium bisulfite)
Hazard class	8
UN number	UN2693
Packing group	III
<b>Additional information:</b>	
Special provisions	IB3, T7, TP1, TP28
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241
ERG number	154



### Canadian Transportation of Dangerous Goods (TDG) Requirements

#### Basic shipping requirements:

Proper shipping name	BISULFITES, AQUEOUS SOLUTION, N.O.S. (Ammonium bisulfite)
Hazard class	8
UN number	UN2693
Packing group	III
<b>Additional information:</b>	
Special provisions	16
ERG number	154





### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

### International regulations

#### Canada - WHMIS - Ingredient Disclosure List

Ammonium bisulfite 10192-30-0 1 %

### State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

#### U.S. - Massachusetts - Right To Know List

Ammonium bisulfite 10192-30-0 Present

#### U.S. - New Jersey - Right to Know Hazardous Substance List

Ammonium bisulfite 10192-30-0 sn 0090

#### U.S. - Pennsylvania - RTK (Right to Know) List

Ammonium bisulfite 10192-30-0 Environmental hazard

## 16. Other Information

### HMIS® ratings

Health: 2  
Flammability: 0  
Physical hazard: 0

### NFPA ratings

Health: 2  
Flammability: 0  
Instability: 0

### Prepared by

Product Stewardship  
515 Post Oak Blvd  
Suite 142-C  
Houston, TX 77027  
+1-713-693-7706

### Disclaimer

THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.

### Issue date

September-01-2009

### MSDS sections updated

This document has undergone significant changes and should be reviewed in its entirety.



...A Weatherford Company



# HALLIBURTON

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** CLA-STA XP ADDITIVE

**Revision Date:** 04-Jan-2011

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.  
53-55 Bannister Road  
Canning Vale  
WA 6155  
Australia

ACN Number: 009 000 775  
Telephone Number: 61 (08) 9455 8300  
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**  
Australia: 08-64244950  
Papua New Guinea: 05 1 281 575 5000  
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**  
Australia: 000  
Papua New Guinea: 000  
New Zealand: 111

### Identification of Substances or Preparation

**Product Trade Name:** CLA-STA XP ADDITIVE  
**Synonyms:** None  
**Chemical Family:** Blend  
**UN Number:** None  
**Dangerous Goods Class:** None  
**Subsidiary Risk:** None  
**Hazchem Code:** None  
**Poisons Schedule:** None  
**Application:** Clay Stabilizer

**Prepared By** Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	Australia NOHSC	ACGIH TLV-TWA
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	30 - 60%	Not applicable	Not applicable

Total to 100%

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. May be harmful if swallowed.

#### Hazard Ratings

<b>Flammability:</b>	1
<b>Toxicity:</b>	0
<b>Body Contact:</b>	0
<b>Reactivity:</b>	0
<b>Chronic:</b>	0

Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

### 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

### 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons** None known.

**Special Exposure Hazards** Product is not expected to burn unless all the water is boiled away. Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

### 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

**Storage Information**

Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use.

<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
---

<b>Engineering Controls</b>	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
<b>Respiratory Protection</b>	Organic vapor respirator with a dust/mist filter.
<b>Hand Protection</b>	Impervious rubber gloves.
<b>Skin Protection</b>	Rubber apron.
<b>Eye Protection</b>	Chemical goggles; also wear a face shield if splashing hazard exists.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
--

<b>Physical State:</b>	Liquid
<b>Color:</b>	Clear amber
<b>Odor:</b>	Amine
<b>pH:</b>	4-8
<b>Specific Gravity @ 20 C (Water=1):</b>	1.13
<b>Density @ 20 C (kg/l):</b>	1.13
<b>Bulk Density @ 20 C (kg/m<sup>3</sup>):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Pour Point/Range (C):</b>	Not Determined
<b>Flash Point/Range (C):</b>	Not Determined
<b>Flash Point Method:</b>	PMCC
<b>Autoignition Temperature (C):</b>	Not Determined
<b>Flammability Limits in Air - Lower (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Lower (%):</b>	Not Determined
<b>Flammability Limits in Air - Upper (g/m<sup>3</sup>):</b>	Not Determined
<b>Flammability Limits in Air - Upper (%):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Soluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (g/l):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	40-55
<b>Viscosity, Kinematic @ 20 C (centistokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined
<b>Decomposition Temperature (C):</b>	Not Determined

<b>10. STABILITY AND REACTIVITY</b>
-------------------------------------

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None anticipated
<b>Incompatibility (Materials to Avoid)</b>	Strong oxidizers.

**Hazardous Decomposition Products** Oxides of nitrogen. Carbon monoxide and carbon dioxide.

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Inhalation** May cause respiratory irritation.

**Skin Contact** May cause skin irritation.

**Eye Contact** May cause severe eye irritation.

**Ingestion** Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Aggravated Medical Conditions** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information** None known.

### Toxicity Tests

**Oral Toxicity:** Not determined

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** TLM96: 300 ppm (Mysidopsis Bahia)

**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

### 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

### 14. TRANSPORT INFORMATION

#### Land Transportation

**ADR**  
Not restricted

#### Air Transportation

**ICAO/IATA**  
Not restricted

#### Sea Transportation

**IMDG**  
Not restricted

#### Other Shipping Information

**Labels:** None

### 15. REGULATORY INFORMATION

#### Chemical Inventories

**Australian AICS Inventory** Product contains one or more components not listed on inventory.  
**US TSCA Inventory** All components listed on inventory or are exempt.  
**EINECS Inventory** This product, and all its components, complies with EINECS

**Classification** Xi - Irritant.

**Risk Phrases** R41 Risk of serious damage to eyes.

**Safety Phrases** S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S29 Do not empty into drains.  
S35 This material and its container must be disposed of in a safe way.

### 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**

Not applicable

## **Contact**

### **Australian Poisons Information Centre**

24 Hour Service: - 13 11 26

Police or Fire Brigade: - 000 (exchange): - 1100

### **New Zealand National Poisons Centre**

0800 764 766

### **Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

### **Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***