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LANDFILL SITING REPORT

March 2012

LANDFILL SITING REPORT

Avalon Facility
Section 36, Township 26 South, Range 31 East
Eddy County, New Mexico

Project No. 11-0131-02

March 10, 2012

Prepared for:
R360 Environmental Services, Inc.
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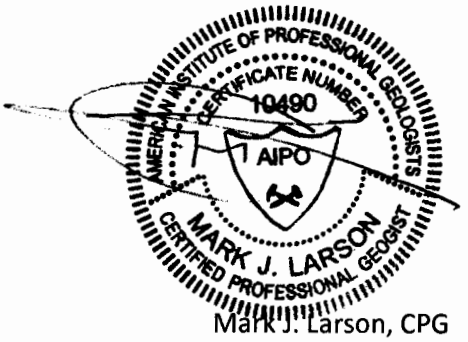

Mark J. Larson, CPG
Certified Professional Geologist No. 10490

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1.0 INTRODUCTION

This report was prepared by Larson & Associates, Inc. (LAI) on behalf of R360 Environmental Solutions, Inc., (R360) to present siting compliance (NMAC19.15.36.13) for a New Mexico Oil Conservation Division (NMOCD) permitted landfill (Avalon Facility) in Eddy County, New Mexico. The landfill will be located on approximately 267 acres of land in the north-half and lots 1 through 4 of the south half of Section 36, Township 26 South, Range 31 East, in Eddy County, New Mexico. Figure 1 presents a location and topographic map. Figure 2 presents a detailed topographic map. Figure 3 presents an aerial map. Figure 4 presents a property drawing.

2.0 PROPERTY CHARACTERISTICS

2.1 Description

The property is bound on the north by State Line Road, on the south by Loving County, Texas, on the east by Lea County, New Mexico, and on the west by U.S. BLM administered land. The property is privately owned and is undeveloped except for oil and gas production near the west side of the property. There are no parks, recreation areas, cultural, historic, or archaeological resources in the immediate vicinity of the property. Road traffic is limited to oilfield lease roads near the west side of the property.

2.2 Topography

The highest elevation is 3156.67 feet above mean sea level (MSL) near the northeast corner. The topography slopes to the north toward State Line Road and to the southwest. The elevation near the northwest corner of the property is approximately 3140 feet above MSL and slopes top the south. Figure 5 presents a surveyed topographic map with 1-foot contour interval.

2.3 Geology

Between October 27, 2011 and November 1, 2011, LAI personnel supervised drilling eight (8) borings (BH-1 through BH-8) at the property. Scarborough Drilling Company (SDC) drilled the borings with an air rotary rig and samples were collected using a jam tube sampler. The borings were drilled between approximately 40 and 140 feet below ground surface (bgs) and logged according to the Unified Soil Classification System. Figure 4 presents a site drawing and boring locations. Appendix A presents the borehole logs.

The Ogallala formation (Tertiary) underlies the property and is comprised of fluvial sand, silt, clay and localized gravel. The sand is unconsolidated to weakly cemented with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz, and is known to contain arsenic, barium and other heavy metals. Gravelly, gravelly sand, gravel, sandy gravel and sandy-clayey gravel occur in the upper part of the Ogallala formation and ranges in thickness from approximately 22 to 39 feet thick. Caliche occurs in the upper part of the Ogallala formation and ranges in thickness from approximately 4

to 21 feet. The gravel is underlain by sand and silty sand. The Ogallala formation is approximately 240 feet thick. The Ogallala formation is underlain by clay, siltstone and sandstone of the Triassic-age Chinle formation of the Dockum Group.

3.0 SITING

3.1 Depth to Groundwater

Groundwater was measured in a windmill located east of the property in Unit D (NW/4, NW/4), Section 31, Township 26 South, Range 32 East, in Lea County, New Mexico. On November 2, 2011, LAI measured the water level at 177 feet below ground surface (bgs). The saturated thickness is from approximately 70 feet. The base of the aquifer occurs at approximately 240 feet bgs. Table 1 presents a summary of depth to groundwater measurements.

3.2 Water Courses, Lakebeds, Sinkholes and Playa Lakes

No lakebeds, sinkholes or playa lakes are present on the property. Five drainages (Drainage 1 through 5) control run-off. The drainages begin and terminate on the property. Drainage 6 located near the southeast corner of the property drains to the southwest and intercepts a lease road south of the property. Figure 5 presents the drainage locations. Appendix B presents photographs.

Drainage 1 is located near the southwest corner of the property and is approximately 500 feet long. The drainage terminates on the property. Drainage 1 is shown in photographs 1 through 4.

Drainage 2 is located near the north central area of the property and is approximately 500 feet long. The drainage flows southwest and terminates on the property. Drainage 2 is shown in photographs 5 through 7.

Drainage 3 is located near the east central area of the property and is approximately 1000 feet long. The drainage flows to the southwest and terminates on the property. Drainage 3 is shown in photographs 8 through 10.

Drainage 4 is located near the east side of the property and is approximately 2400 feet long. The drainage flows southwest and terminates on the property. Drainage 4 is shown in photographs 11 through 15.

Drainage 5 is located near the southeast corner of the property and is about 300 feet long. The drainage flows south and intersects drainage 6 near the south property line. Drainage 5 is shown in photographs 16 through 18.

Drainage 6 is located near the southeast corner of the property and is approximately 660 feet long. The drainage appears to be developed on an abandoned trail that runs west and parallel to the south property line. Drainage 6 terminates at an oilfield lease road located south of the property. Drainage 6 is shown in photographs 19 through 24.

Photographs 25 through 33 show the general topography of the east side of the property. Photograph 34 shows the windmill located east of the property.

3.3 Wellhead Protection Area and Flood Plain

The property is not located within a wellhead protection area or flood plain.

3.4 Wetlands

Wetlands must exhibit hydric soil during the growing season (i.e., inundated or saturated) and hydrophytic vegetation (i.e., cattail, water lily). No hydric soil or hydrophytic vegetation was observed on the property.

3.5 Subsurface Mines

No subsurface mines are located on the property.

3.6 Permanent Residences

No permanent residences are located within 500 feet of the property. The nearest permanent residence is located approximately 3.75 miles northeast of the property. Figure 6 shows the approximate location of the nearest permanent residence.

3.7 Unstable Area

The property is not located in an unstable area.

3.8 Water Wells

Four (4) water wells were identified within approximately 1-mile of the property. The nearest well is located about 150 feet south of the Property and used for drilling rig supply. A windmill is located east of the property and is out of service. Two wells are located southeast of the property and supply water to drilling rigs. Figure 6 presents the locations of water wells. Table 1 presents a summary of the water well construction details. Appendix C presents the water well records.

3.9 Groundwater Quality

On November 2, 2011, a groundwater sample was collected from the windmill located east of the property. The well was pumped with an electric submersible pump to remove 3 casing volumes of groundwater. The sample was analyzed for organic (BTEX), dissolved metals (arsenic, cadmium, chromium, lead, mercury, selenium and silver) and general inorganic (chloride, sulfate, nitrate, alkalinity and TDS). Table 2 presents a groundwater analytical data summary. Appendix D presents the laboratory report.

Referring to Table 1, no analytical parameters exceeded the New Mexico Water Quality Control Commission (WQCC) human health and domestic water quality standards.

4.0 BORING PLAN

Four (4) borings will be drilled on the property to satisfy NMOCD permitting requirements for the landfill application. The approximate boring locations are shown on Figure 4. The borings will be drilled using sonic rig, hollow stem auger or equivalent method with continuous core samples to a total depth of approximately 150 feet bgs. Soil samples will be examined and described according to the USCS and collected for geotechnical analysis. The sample depths will be equivalent to the base of the proposed landfill cells or approximately 40 feet bgs. Drilling will be halted for approximately 45 to 60 minutes where moisture to determine the presence of groundwater. The presence of groundwater will be determined by measuring with an electronic water level meter or lowering and retrieving the core sampler.

If groundwater is observed in the boring will be extended vertically approximately 10 feet and completed as a monitoring well. The well will be completed using 2 inch schedule 40 PVC casing and screen. Approximately 10 feet of 0.010 inch factory slotted screen will be placed near the bottom of the boring and surrounded by graded silica sand which will extend approximately 2 feet above the well screen. The remainder the annular space between the well and boring will be filled with betonies chips to approximately 2 feet bgs. Depth to groundwater will be measured in the well to determine the stabilized depth to groundwater.

Tables

Table 1
Water Well Completion and Gauging Summary
R360 Environmental Solutions, Inc. -Avalon Facility
Eddy County, New Mexico
11-0131-02

Well Information									Groundwater Data	
Well ID	Location (Sec/T/R)	Date Drilled	Purpose	Drilled Depth (bgs)	Well Depth from TOC	Well Diameter (inches)	Screen Interval (feet bgs)	Casing Stickup	Date	Depth to Groundwater (feet bgs)
Windmill	31/26S/32E	Unknown	Stock	Unknown	217.65	5	Unknown	1.00	11/02/11	178.00
270635	--	11/2/2011	Rig	240	240.00	6	140 - 240	Unknown	--	--
122867	--	9/14/2007	Stock	393	393	5	373 - 393	Unknown	09/14/07	190.00
270637	--	11/1/2011	Rig	320	320.00	6	200 - 320	Unknown	--	--
275647	--	12/29/2011	Rig	280	280.00	6	180 - 280	Unknown	--	--
274766	--	11/30/2011	Rig	230	230.00	6	100 - 200	Unknown	--	--
270633	--	8/27/1900	Rig	240	240.00	6	100 - 240	Unknown	--	--
274767	--	11/29/2011	Rig	230	230.00	6	100 - 230(?)	Unknown	--	--
276880	--	1/8/2012	Rig	200	200.00	6	100 - 200	Unknown	--	--

Notes: Well locations based on field measurements (windmill) and State of Texas Department of Licensing and Regulation.
All values are in feet, unless otherwise noted.
bgs - below ground surface
TOC - below top of casing

Table 2
Organic and Inorganic Groundwater Analytical Data Summary
R360 Environmental Solutions, Inc. - Proposed Avalon Landfill
11-0131-02

Location	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Standard:		**0.01**	**0.75**	**0.75**	**0.62**
Windmill	11/2/2011	<0.0008	<0.002	<0.002	<0.003
Location	**Date**	**Arsenic**	**Barium**	**Cadmium**	**Chromium**
WQCC Standard:		**0.1**	**1**	**0.01**	**0.05**
Windmill	11/2/2011	<0.002	**0.178**	<0.0003	<0.002
Location	**Date**	**Lead**	**Mercury**	**Selenium**	**Silver**
WQCC Standard:		**0.05**	**0.002**	**0.05**	**0.05**
Windmill	11/2/2011	<0.0003	<0.00008	**0.00283**	<0.001
Location	**Date**	**Chloride**	**Nitrate - N**	**Sulfate**	**Alkalinity**
WQCC Standard:		**250**	**10**	**600**	
Windmill	11/2/2011	**35.3**	**2.71**	**190**	**175**
Location	**Date**	**TDS**			
WQCC Standard:		**1000**			
Windmill	11/2/2011	**589**			

Notes

All concentrations are in milligrams per liter (mg/L, parts per million).

<: Indicates concentration below test method detection limit

Bold indicates analyte was detected.

Bold and Blue *indicates the value exceeds the Cleanup Level.*

Figures

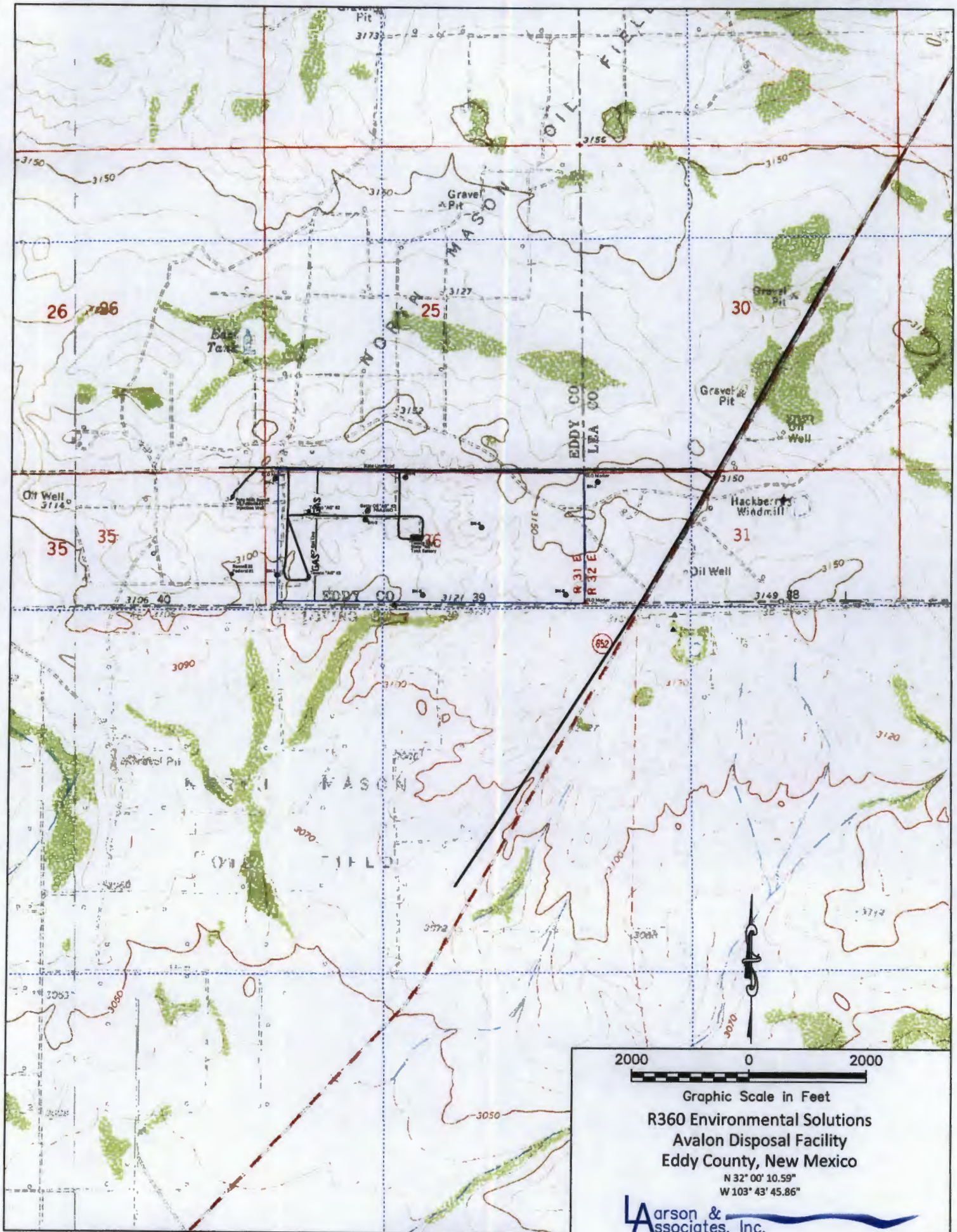


Figure 1 - Topographic Map

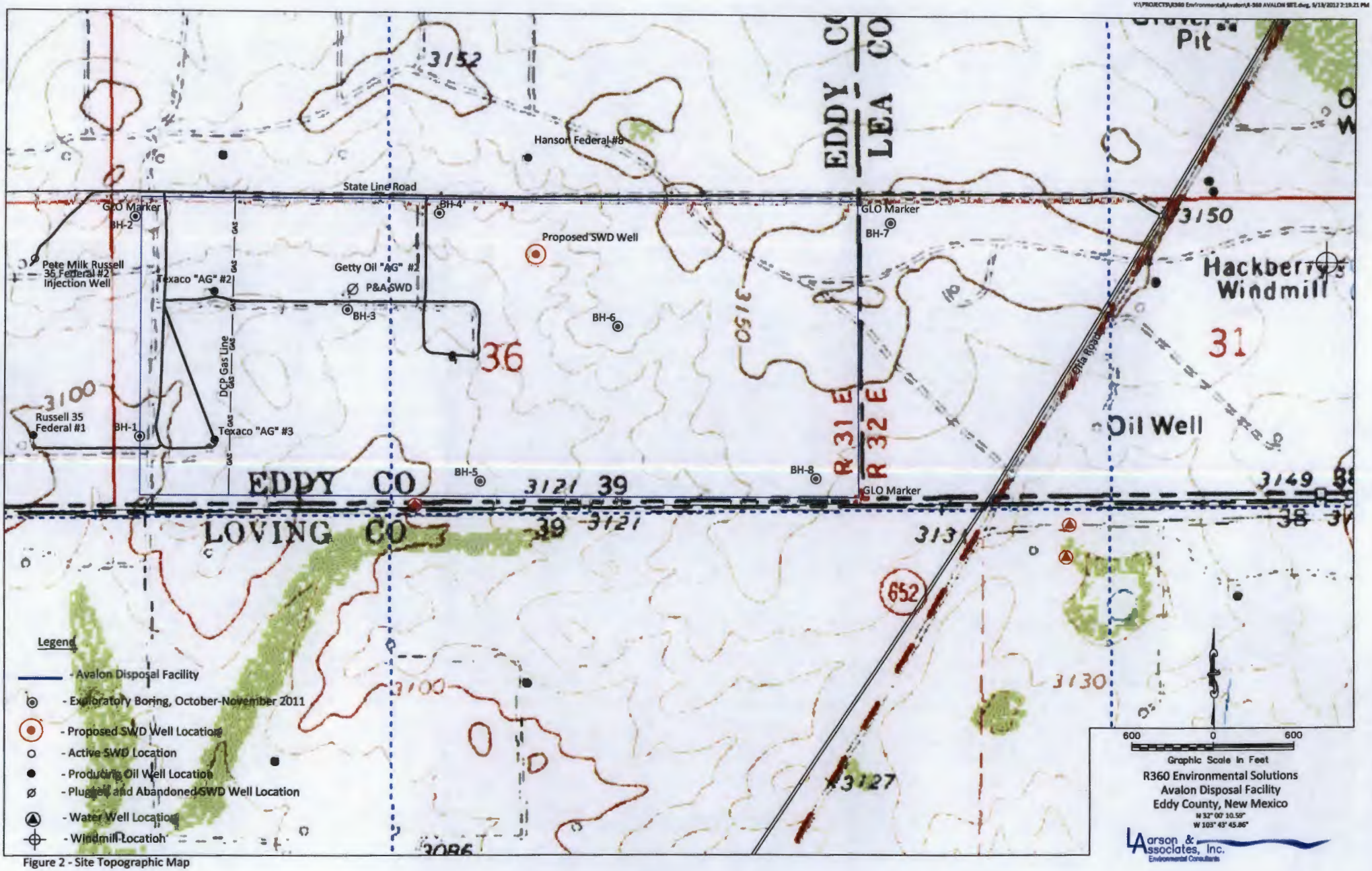


Figure 2 - Site Topographic Map

Figure 3 - Aerial Map

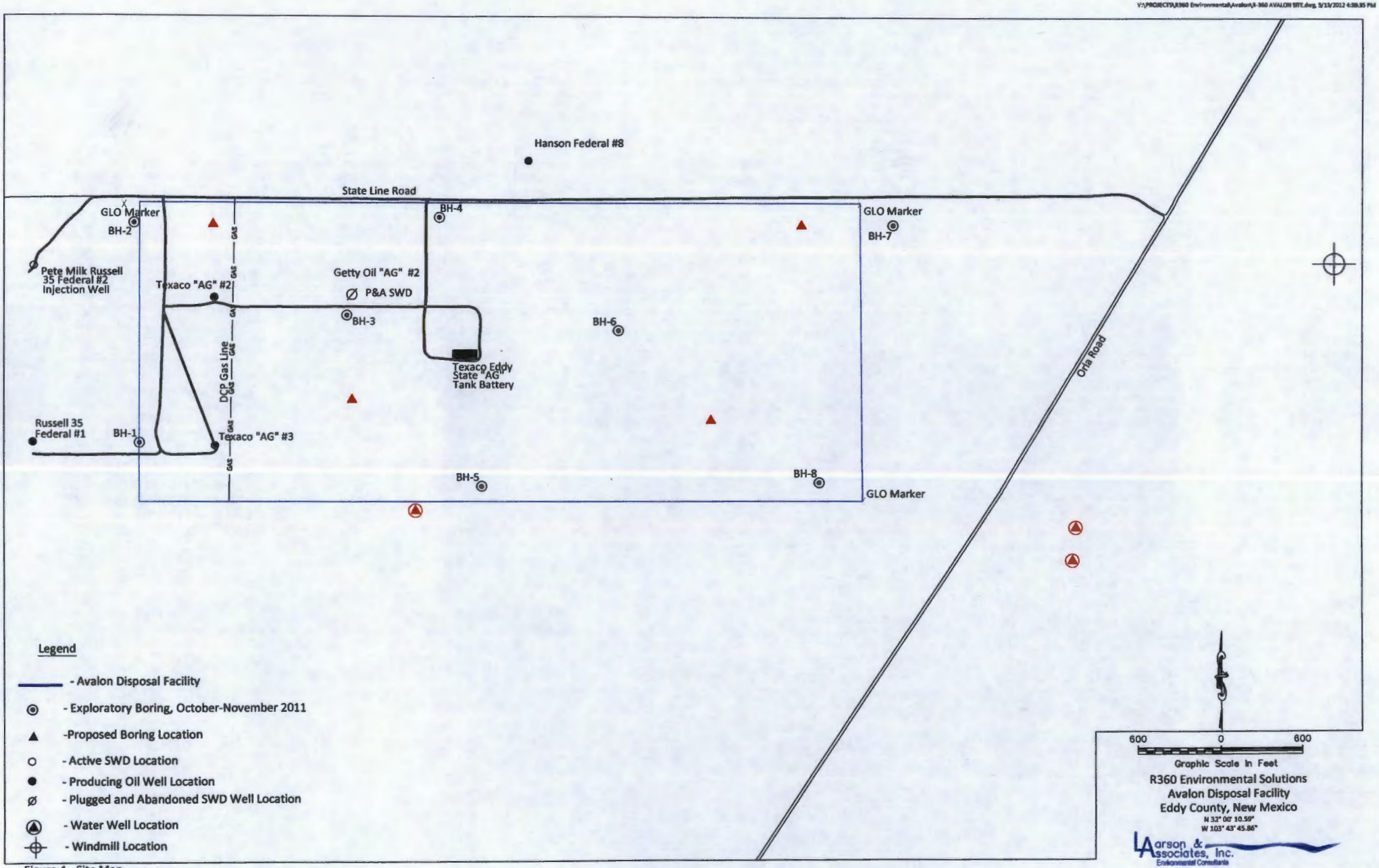
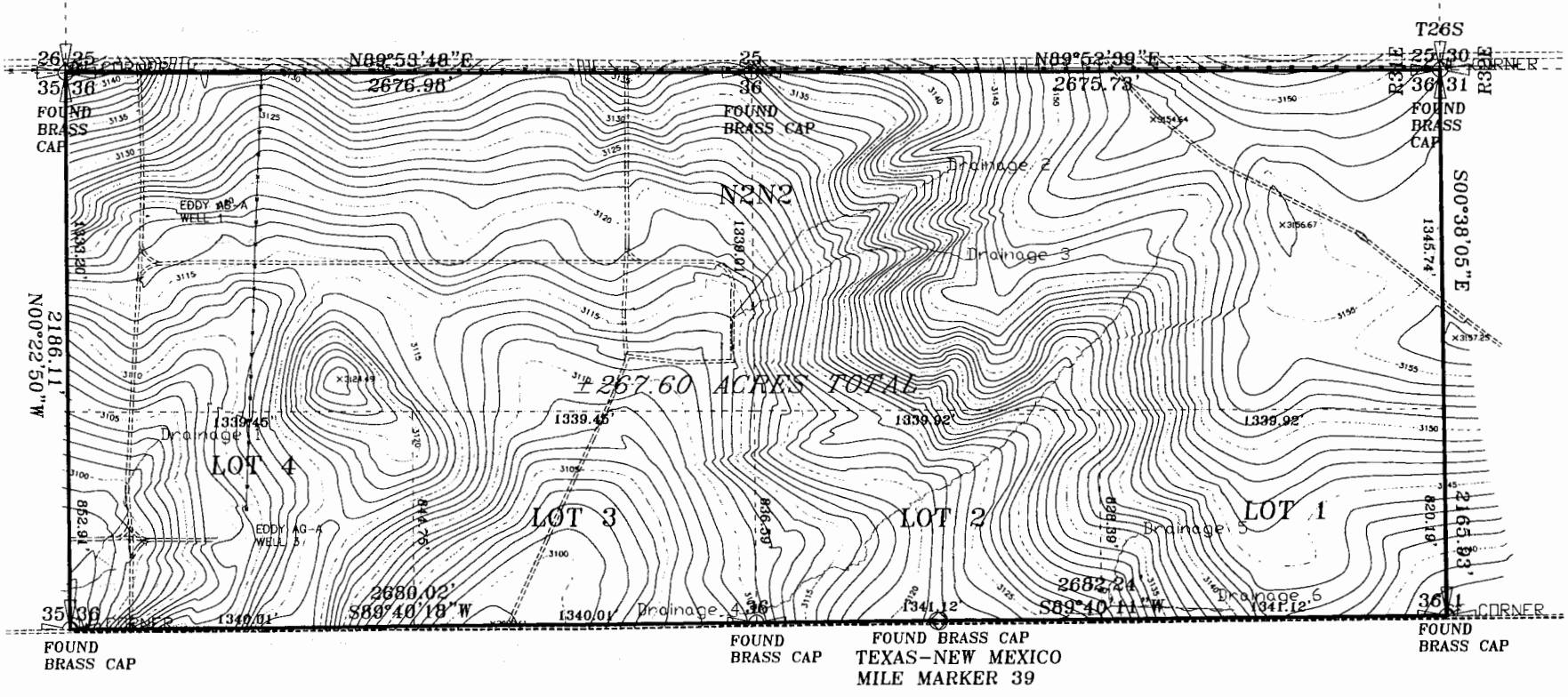


Figure 4 - Site Map

TOPOGRAPHIC SURVEY OF 36-26-31



LEGEND

- CORNER FOUND
- CORNER SET
- FENCE LINE
- SECTION CORNER
- QUARTER CORNER
- TEXAS NEW MEXICO MILE MARKER
- DIRT ROAD
- LAND LINE
- EXISTING PIPELINE
- OVERHEAD ELECTRIC LINE
- Water Structure (Added by Terry and Associates) (NOT PART OF ORIGINAL SURVEY)

Scale 1" = 200'

2/10/2012

FIGURE 5 – TOPOGRAPHIC AND DRAINAGE MAP

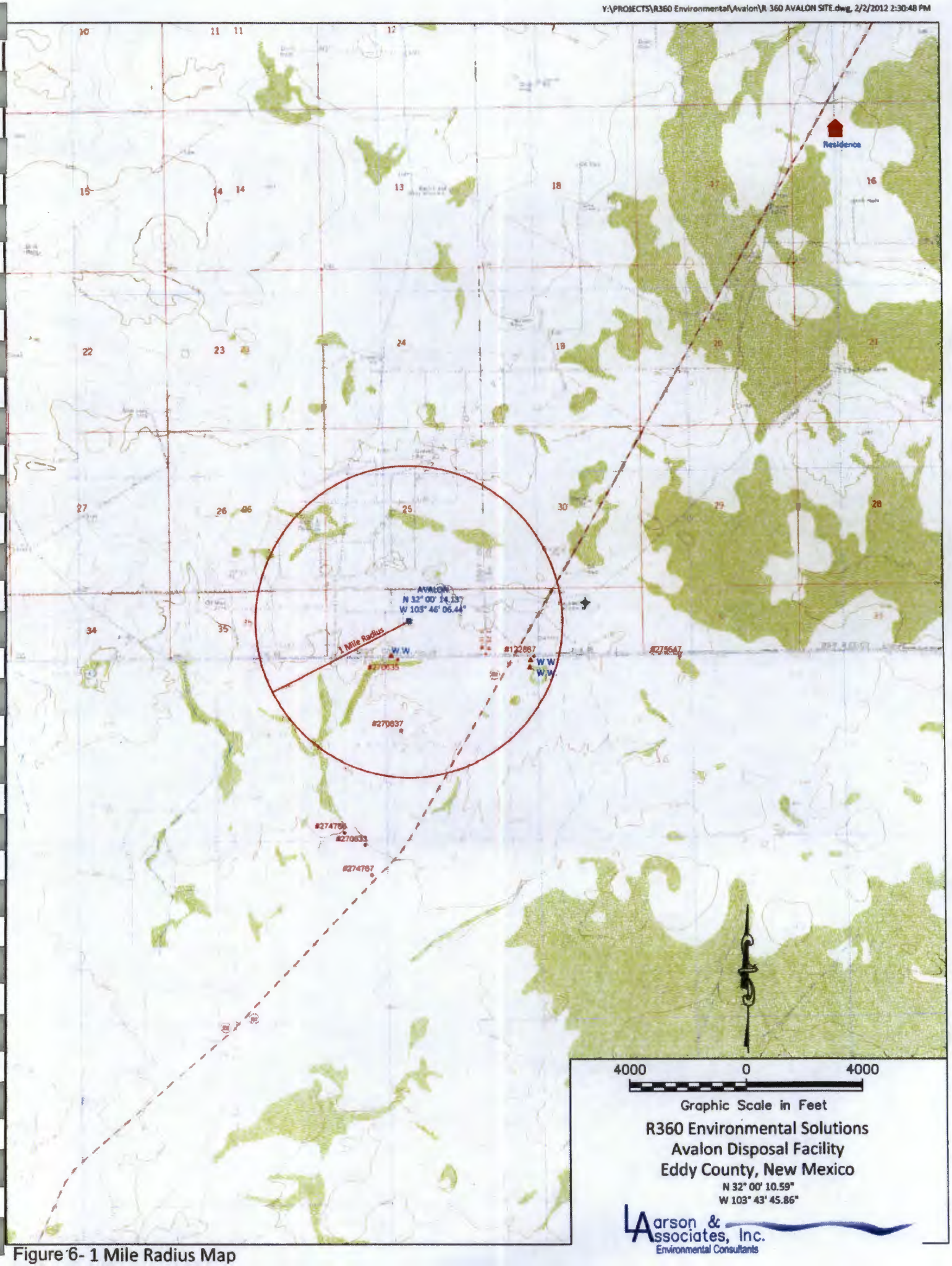


Figure 6- 1 Mile Radius Map

Appendix A

Boring Logs

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt: Brown (7.5YR 4/4), very fine grained quartz sand, poorly sorted, loose, dry	ML			Location Data: N 32.001403691 W 103.739875427
	3.0	Caliche: Pinkish White to Pinkish Gray (7.5YR 8/2 to 7/2), indurated to thin bedded, moderately hard	Caliche			No Well Completed
	7.0	Silty Sand: Pink (5YR 7/3 to 7/4), very fine grained quartz sand, very poorly sorted, moderately dry	SM			
	37.0	Gravel: Gray to Reddish Gray (5YR 5/1 to 5/2), quartzite pebble to >30mm round	GW			
	40.0	Silty Sand: Pink (5YR 7/3), very fine grained quartz sand	SM			
	40.0	Total Depth: 40 Feet				

Legend

- Water Table (Time of Boring)

Date Drilled - 10/27/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt: Brown (7.5YR 4/4), very fine grained quartz sand, loose, dry	ML			Location Data: N 32.005859370 W 103.739982168
	2.0	Gravel: Gray to Reddish Gray (5YR 5/1 to 5/2), quartzite pebbles to >30mm round, moderately cemented	GW			No Well Completed
	16.0	Gravelly Sand: Reddish Yellow (7.5YR 6/6), very fine to coarse grained quartz sand and gravel, pebbles to >30mm round, moderately cemented	SM - GW			
	35	Sand: Pink (7.5YR 7/4), very fine grained quartz sand, poorly sorted, slightly compacted, dry	SM			

Legend

- Water Table (Time of Boring)

Date Drilled - 10/27/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - M. Larson
Checked By - M. Larson

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N 32° 00' 10.59"
W 103° 43' 45.86"

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Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Sandy Silt: Grayish Yellow Brown (10YR 6/2), unconsolidated, dense caliche fragments in matrix, dry	ML			Location Data: N 32.003977981 W 103.735001039
	5	Caliche: White (5YR 8/1), weathered dense, interbedded with moderately well cemented very fine grained sandstone, dry	Caliche			No Well Completed
	10	Caliche: Pale Yellow (2.5YR 8/2), dense weathered, interbedded with moderately well cemented very fine grained sandstone, dry	Caliche			
	15	Sandstone: Dull Reddish Brown (5YR 5/4), very fine grained quartz sand, moderately well cemented, interbedded with dense weathered caliche	Sand-Stone			
	20	Sandy Gravel: Light Gray (7.5YR 8/2), unconsolidated, interbedded with very fine grained quartz sand, dry	GP			
	25					
	30					
	35	Sand: Pale Yellow (5YR 6/6), very fine grained quartz sand, unconsolidated	Sand			
	40					
	41.0	Total Depth: 41 Feet				
	45					
	50					
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 10/28/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - J. Fergerson
Checked By - J. Fergerson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

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Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Sandy Silt: Light Yellow (2.5Y 7/4), unconsolidated, dense, caliche fragments in matrix, dry	SM			Location Data: N 32.005934127 W 103.732807418
	5	Sandy Gravel: Light Gray (2.5Y 8/2), unconsolidated, dry	GP			No Well Completed
	10	Gravelly Sand: Light Gray (2.5Y 8/2), very fine grained quartz sand, unconsolidated, dry	SP			
	15	Sandy Gravel: Dull Yellow Orange (10YR 7/4), unconsolidated	GP			
	20					
	25	Gravelly Sand: Orange (7.5YR 6/6), very fine grained quartz sand, unconsolidated	SP			
	30					
	32.0	Sand: Bright Brown (7.5YR 5/6), very fine grained quartz sand, unconsolidated	SM			
	35	Sand: Orange (7.5YR 6/6), very fine grained quartz sand, unconsolidated	SM			
	40	Total Depth: 40 Feet				
	45					
	50					
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 10/28/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - J. Fergerson
Checked By - J. Fergerson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt: Brown (7.5Y 4/4), very fine grained quartz sand, dry	ML			Location Data: N 32.000480389 W 103.731821840
	3.0	Caliche: Pinkish Gray (7.5Y 8/2 to 7/2), indurated to thin bedded, moderately hard	Caliche			No Well Completed
	8.0	Gravel: Gray to Reddish Gray (5Y 5/1 to 5/2), quartzite pebbles >30mm round	GW			
	22.0	Sand: Pink (7.5Y 7/4), very fine grained quartz sand, poorly sorted, slightly compacted to loose, dry	SM			
	40	Total Depth: 40 Feet				

Legend

- - - - Water Table (Time of Boring)

Date Drilled - 10/31/2011
Drilling Method - Air Rotary
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Logged By - M. Larson
Checked By - M. Larson

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Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt: Brown (7.5YR 4/4), very fine grained quartz sand, loose, dry	ML			Location Data: N 32.003636368 W 103.728585224
	2.0	Caliche: Pinkish Gray (7.5YR 8/2 to 7/2), indurated, moderately hard,	Caliche			No Well Completed
	5					
	6.0	Sandy Gravel: Pinkish Gray to Light Brown (5YR 5/1 to 7.5YR 7/2 to 6/3), very fine to very coarse grained quartz sand, quartzite gravel >30mm round, very poorly sorted	GW			
	10					
	15					
	20					
	25					
	30	Sand: Pink (7.5YR 7/4), very fine to very coarse grained quartz sand, poorly sorted, dry, some clay between 30-40'	SM			
	35					
	40					
	45					
	50					
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 10/31/2011
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Drilled By - Scarborough Drilling
Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
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Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	70					
	80	Sand: Reddish Yellow (5YR 4/4), very fine to very coarse grained quartz sand, poorly sorted, loose, dry, poorly cemented, very friable below 90'	SM			
	120	Sand: Reddish Yellow to Reddish Brown (5YR 6/6 to 5/4), very fine to very coarse grained quartz sand, poorly sorted, loose to poorly cemented	SM			
	140	Total Depth: 140 Feet				

Legend

- Water Table (Time of Boring)

Date Drilled - 10/31/2011
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Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
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Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0					Location Data: N 32.005730219 W 103.722166427
	1.0	Silt: Brown (7.SYR 4/4), very fine grained quartz sand, loose, dry	ML			No Well Completed
		Caliche: Pinkish White to Pinkish Gray (5YR 8/2 to 7/2), indurated moderately hard, sandy, very fine grained quartz sand, dry	Caliche			
	22.0	Sandy Gravel: Pinkish White to Pinkish Gray (5YR 8/2 to 7/2), quartzite pebbles to >30mm, round, very poorly sorted, very fine to coarse grained quartz sand	GW			
	35	Sand: Pink (7.5YR 7/4),very fine grained quartz sand, poorly sorted, dry	SM			
	40	Silty Clay: Yellowish Red (5YR 5/6 to 6/6), very fine grained quartz sand, poorly sorted, massive to thin bedded, firm	CL			
	44.0	Total Depth: 44 Feet				

Legend

- Water Table (Time of Boring)

Date Drilled - 11/01/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0					Location Data: N 32.000512441 W 103.723917660
	1.0	Silt: Brown (7.5YR 4/4), very fine grained quartz sand, loose, dry	ML Caliche			No Well Completed
	5	Caliche: Pinkish White to Pinkish Gray (5YR 8/2 to 7/2), indurated, sandy, very fine grained quartz sand, moderately hard, dry				
	10					
	15					
	17.0	Sandy Clayey Gravel: Pinkish Gray to Gray (5YR 7/2 to 5/1), very coarse to fine grained quartz sand with quartzite pebbles >30mm, round, interbedded with gypsum at 20', fibrous	ML			
	20					
	25					
	30					
	35					
	37.0	Clayey Sand: Reddish Brown (5YR 4/4), very fine grained quartz sand, slightly moist, firm, interbedded with alternating units of sand and silty clay	SM			
	40					
	45					
	50					
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 11/01/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
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R360 Environmental Solutions
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Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	70	Sand: Pink (7.5YR 7/4), very fine grained quartz sand, poorly sorted, slightly compacted, dry	SM			
	80	Sand: Light Yellow Orange (10YR 8/3), very fine grained quartz sand, unconsolidated, dry	SM			
	100					
	101.0	Total Depth: 101 Feet				

Legend

- Water Table (Time of Boring)

Date Drilled - 10/27/2011
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Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
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W 103° 43' 45.86"

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Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	70	Clayey Sand: Reddish Brown (5YR 4/4), very fine grained quartz sand, slightly moist, firm, interbedded with alternating units of sand and silty clay	SM			
	75					
	80					
	85					
	90					
	95					
	100	Total Depth: 100 Feet				
	105					
	110					
	115					
	120					
	125					
	130					
	135					

Legend

- Water Table (Time of Boring)

Date Drilled - 11/01/2011
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling
Logged By - M. Larson
Checked By - M. Larson

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

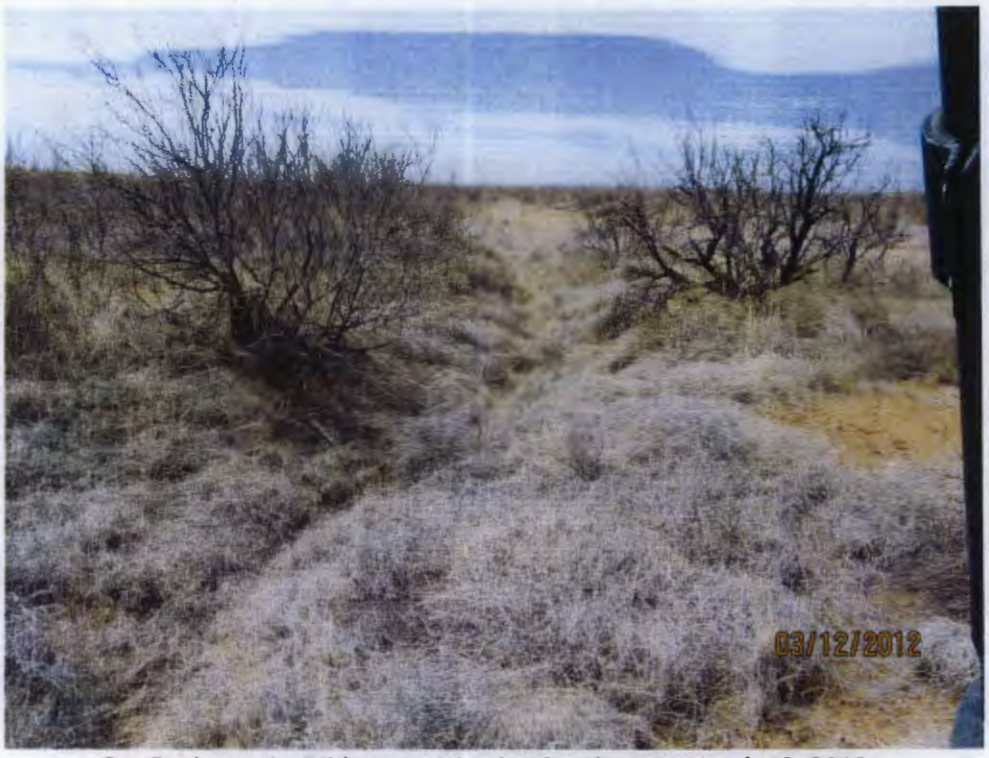
Larson & Associates, Inc.
Environmental Consultants

Appendix B

Photographs

PHOTOGRPAHS

1. Drainage 1 – Upstream Viewing Southwest, March 12, 2012



2. Drainage 1 - Midstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS

3. Drainage 1 - Downstream Viewing Southwest, March 12, 2012

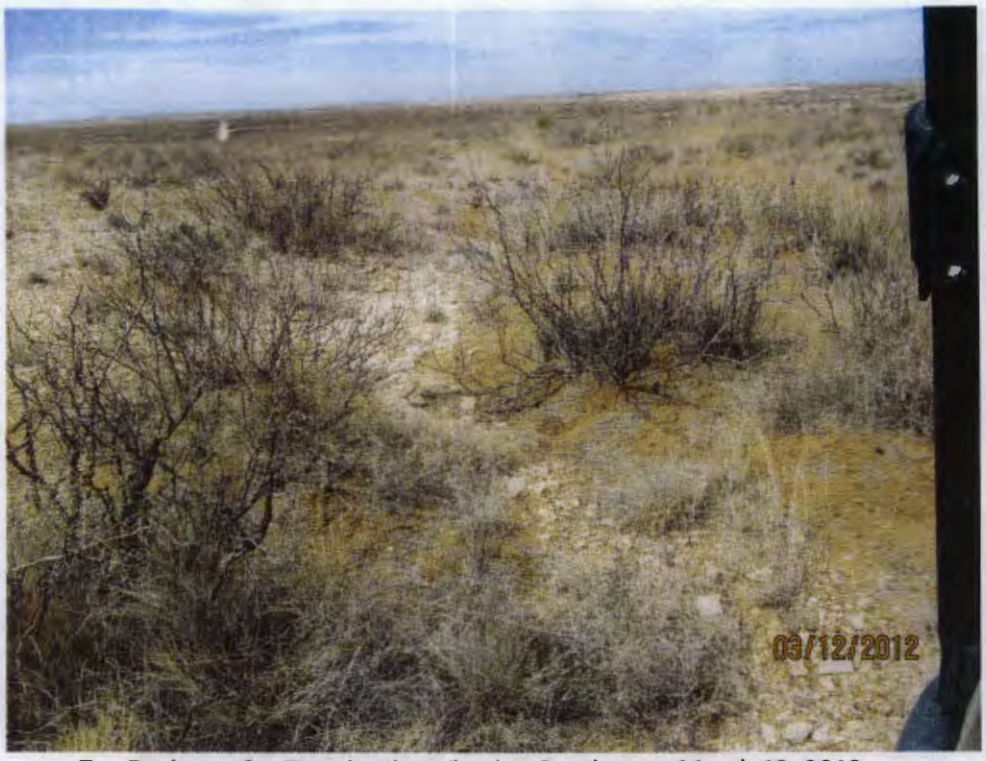
4. Drainage 1 – Termination Viewing Southwest, March 12, 2012

PHOTOGRPAHS

5. Drainage 2 – Upstream Viewing Southwest, March 12, 2012

6. Drainage 2 – Midstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS



7. Drainage 2 – Termination Viewing Southwest, March 12, 2012

8. Drainage 3 – Upstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS

9. Drainage 3 – Downstream Viewing Southwest, March 12, 2012

10. Drainage 3 – Termination Viewing Southwest, March 12, 2012

PHOTOGRPAHS

11. Drainage 4 – Upstream Viewing Southwest, March 12, 2012

12. Drainage 4 - Midstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS

13. Drainage 4 - Downstream Viewing Southwest, March 12, 2012

14. Drainage 4 - Downstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS

15. Drainage 4 – Termination Viewing Southwest, March 12, 2012

16. Drainage 5 – Upstream South, March 12, 2012

PHOTOGRPAHS

17. Drainage 5 – Midstream Viewing South, March 12, 2012

18. Drainage 5 – Termination Viewing South, March 12, 2012

PHOTOGRPAHS

19. Drainage 6 – Upstream Viewing West, March 12, 2012

20. Drainage 6 – Midstream Viewing West, March 12, 2012

PHOTOGRPAHS

21. Drainage 6 - Downstream Viewing Southwest, March 12, 2012

22. Drainage 6 - Downstream Viewing Southwest, March 12, 2012

PHOTOGRPAHS

23. Drainage 6 – Termination Viewing Southwest, March 12, 2012

24. Drainage 6 – Termination Viewing West, March 12, 2012

PHOTOGRPAHS

25. North Side of Property Viewing East Along State Line Road, March 12, 2012

26. North Side of Property Viewing Southeast Along State Line Road, March 12, 2012

PHOTOGRPAHS

27. North Side of Property Viewing Northeast Along State Line Road, March 12, 2012

28. Near Center of East Side of Property Viewing East, March 12, 2012

PHOTOGRPAHS

29. Near Center of East Side of Property Viewing Northeast, March 12, 2012

30. Near Center of East Side of Property Viewing North, March 12, 2012

PHOTOGRPAHS

31. Northeast Corner Viewing West Along State Line Road, March 12, 2012

32. Northeast Corner Viewing Northwest Along State Line Road, March 12, 2012

PHOTOGRPAHS

33. Northeast Corner Viewing South Along State Line Road, March 12, 2012

34. Windmill Located East of CR-1 Viewing East at State Line Road, March 12, 2012

Appendix C

Water Well Records

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 27 **Township:** 26S **Range:** 31E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 26 **Township:** 26S **Range:** 31E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 25 **Township:** 26S **Range:** 31E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 35 **Township:** 26S **Range:** 31E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 36 **Township:** 26S **Range:** 31E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 29 **Township:** 26S **Range:** 32E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 30 **Township:** 26S **Range:** 32E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 31 **Township:** 26S **Range:** 32E

New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 32 **Township:** 26S **Range:** 32E

STATE OF TEXAS WELL REPORT for Tracking #270635

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**JN 2771**
Address:	**4001 PENBROOK ODESSA , TX 79761**	Grid #:	**26-59-7**
Well Location:	**MENTONE , TX 79754**	Latitude:	**32° 00' 00" N**
Well County:	**Loving**	Longitude:	**103° 43' 59" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **11/2/2011**
Completed: **11/2/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 240 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **0.02**

Annular Seal Data: 1st Interval: **From 0 ft to 15 ft with 6 BAG CEMENT (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **DARRELL CRASS DRILLING**
PO BOX 60031
MIDLAND , TX 79711

Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#270635**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**3**	**TOP SOIL**
3	**15**	**CALICHE**
15	**33**	**SAND**
33	**38**	**GRAVEL**
38	**50**	**SANDY CLAY**
50	**60**	**GRAVEL**
60	**70**	**SANDY CLAY**
70	**100**	**SAND**
100	**180**	**SANDY CLAY**
180	**210**	**SAND**
210	**230**	**SANDY CLAY**
230	**240**	**RED BED**

CASING, BLANK PIPE & WELL SCREEN DATA

Dia.	New/Used	Type	Setting From/To
6"	**NEW**	**PVC PIPE BLANK**	**0 - 140**
6"	**NEW**	**PVC PIPE SCREEN**	**140 - 240**

STATE OF TEXAS WELL REPORT for Tracking #122867

Owner:	**Zane Kiehne**	Owner Well #:	**No Data**
Address:	**P.O. Box 7** **Orla , TX 79770**	Grid #:	**46-03-1**
Well Location:	**17 miles E. of 285 on Hwy 652** **TX**	Latitude:	**31° 59' 59" N**
Well County:	**Loving**	Longitude:	**103° 43' 04" W**
Elevation:	**3154 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Date: Started: **9/14/2007**
Completed: **9/19/2007**

Diameter of Hole: Diameter: **8-3/4 in From Surface To 399 ft**

Drilling Method: **Mud Rotary**

Borehole Completion: Gravel Packed From: **393 ft to 190 ft**
Gravel Pack Size: **3/8 vealmo**

Annular Seal Data: 1st Interval: **From 0 ft to 10 ft with 6 Cement (#sacks and material)**
2nd Interval: **From 170 ft to 190 ft with 8 Hole Plug (#sacks and material)**
3rd Interval: **No Data**
Method Used: **Poured Slurry**
Cemented By: **WTWWS**
Distance to Septic Field or other Concentrated Contamination: **N/A ft**
Distance to Property Line: **N/A ft**
Method of Verification: **N/A**
Approved by Variance: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: Static level: **190 ft. below land surface on 9/20/2007**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **Fresh**
Depth of Strata: **240-300 / 385-395 ft.**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **West Texas Water Well Service**
3410 Mankins

	Odessa , TX 79764
Driller License Number:	**4854**
Licensed Well Driller Signature:	**Ronny Keith**
Registered Driller Apprentice Signature:	**Luis Armendariz**
Apprentice Registration Number:	**3030**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#122867**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**5**	**Top Soil**
5	**18**	**White Sandy Caliche**
18	**20**	**Hard White Limestone**
20	**35**	**Brown Sandstone & Sand**
35	**65**	**Loose Brown Sand**
65	**240**	**Red Sand & Shale**
240	**300**	**Loose Red Sand & Water**
300	**385**	**Red Clay**
385	**395**	**Red Sand**
395	**399**	**Red Clay**

CASING, BLANK PIPE & WELL SCREEN DATA

Dia.	New/Used	Type	Setting From/To
5	**New**	**PVC Screen**	**393 - 373 .035**
5	**New**	**PVC Blank**	**373 - 293**
5	**New**	**PVC Screen**	**293 - 233 .035**
5	**New**	**PVC Blank**	**2' AGL - 233**

STATE OF TEXAS WELL REPORT for Tracking #270637

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**JN 2772**
Address:	**4001 PENBROOK ODESSA , TX 79761**	Grid #:	**46-03-1**
Well Location:	**MENTONE , TX 79754**	Latitude:	**31° 59' 37" N**
Well County:	**Loving**	Longitude:	**103° 43' 56" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **11/1/2011**
Completed: **11/1/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 320 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **0.02**

Annular Seal Data: 1st Interval: **From 0 ft to 15 ft with 6 BAG CEMENT (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **DARRELL CRASS DRILLING**
PO BOX 60031
MIDLAND , TX 79711

Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#270637**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 - 5 TOP SOIL
5 - 30 CALICHE
30 - 100 SAND & SANDSTONE
100 - 112 GRAVEL
112 - 118 CLAY
118 - 260 SAND & SANDSTONE
260 - 270 SANDY CLAY
270 - 310 SAND
310 - 320 RED BED

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
6" NEW PVC PIPE BLANK 0 - 200
6" NEW PVC PIPE SCREEN 200 - 320

STATE OF TEXAS WELL REPORT for Tracking #275647

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**JN 2722**
Address:	**4001 PENBROOK** **ODESSA , TX 79760**	Grid #:	**46-03-2**
Well Location:	**MENTONE , TX 79754**	Latitude:	**31° 59' 59" N**
Well County:	**Loving**	Longitude:	**103° 42' 07" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **12/29/2011**
Completed: **12/29/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 280 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **.02**

Annular Seal Data: 1st Interval: **From 0 ft to 10 ft with 6 BAG CEMENT (#sacks and material)**
2nd Interval: **From 10 ft to 15 ft with 3 BAG HOLE PLUG (#sacks and material)**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **R. DARRELL CRASS**
PO BOX 60031
MIDLAND , TX 79711

Driller License Number:	**2752**
Licensed Well Driller Signature:	**R. DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#275647**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**2**	**TOP SOIL**
2	**20**	**CALICHE**
20	**40**	**GRAVEL**
40	**80**	**SANDY CLAY**
80	**120**	**SANDSTONE**
120	**200**	**CLAY**
200	**280**	**SANDY CLAY**

CASING, BLANK PIPE & WELL SCREEN DATA

Dia.	New/Used	Type	Setting From/To
6"	**NEW**	**PVC BLANK**	**0 - 180**
6"	**NEW**	**PVC SCREEN**	**180 - 280**

STATE OF TEXAS WELL REPORT for Tracking #270633

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**JN 2768**
Address:	**4001 PENBROOK** **ODESSA , TX 79761**	Grid #:	**46-03-1**
Well Location:	**MENTONE , TX 79754**	Latitude:	**31° 58' 59" N**
Well County:	**Loving**	Longitude:	**103° 44' 11" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **10/30/2011**
Completed: **10/30/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 240 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **0.02**

Annular Seal Data: 1st Interval: **From 0 ft to 10 ft with 6 BAG CEMENT (#sacks and material)**
2nd Interval: **From 10 ft to 15 ft with 2 BAG HOLE PLUG (#sacks and material)**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **DARRELL CRASS DRILLING**
PO BOX 60031
MIDLAND , TX 79711

Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#270633**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 - 6 TOP SOIL
6 - 25 CALICHE
25 - 190 SAND & SANDSTONE
190 - 230 SAND & GRAVEL
230 - 240 RED BED

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
6" NEW PVC PIPE BLANK 0 - 100
6" NEW PVC PIPE SCREEN 100 - 240

STATE OF TEXAS WELL REPORT for Tracking #274766

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**WILDER FED 2H**
Address:	**4001 PENBROOK** **ODESSA , TX 79760**	Grid #:	**46-03-1**
Well Location:	**JN 2788** **MENTONE , TX 79754**	Latitude:	**31° 59' 03" N**
Well County:	**Loving**	Longitude:	**103° 44' 18" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **11/30/2011**
Completed: **11/30/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 230 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **.02**

Annular Seal Data: 1st Interval: **From 0 ft to 15 ft with 6 BAGS CEMENT (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **DARRELL CRASS DRILLING CO., INC**
PO BOX 60031

	MIDLAND , TX 79711
Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#274766**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 - 2 TOP SOIL
2 - 30 CALICHE
30 - 100 SAND
100 - 110 SANDY CLAY
110 - 170 SAND & SANDSTONE
170 - 220 GRAVEL & CLAY
220 - 230 RED BED

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
6" NEW PVC BLANK PIPE 0 - 100
6" NEW PVC SCREEN PIPE 100 - 230

STATE OF TEXAS WELL REPORT for Tracking #274767

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**WILDER FED 2**
Address:	**4001 PENBROOK** **ODESSA , TX 79760**	Grid #:	**46-03-1**
Well Location:	**JN 2789** **MENTONE , TX 79754**	Latitude:	**31° 58' 49" N**
Well County:	**Loving**	Longitude:	**103° 44' 07" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **11/29/2011**
Completed: **11/29/2011**

Diameter of Hole: Diameter: **8.75 in From Surface To 230 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **.02**

Annular Seal Data: 1st Interval: **From 0 ft to 15 ft with 6 BAGS CEMENT (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **DARRELL CRASS DRILLING CO., INC**
PO BOX 60031

	MIDLAND , TX 79711
Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#274767**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 - 2 TOP SOIL
2 - 20 CALICHE
20 - 90 SAND
90 - 120 SANDY CLAY
120 - 200 SAND
200 - 230 SANDSTONE & CLAY
230 - 240 RED BED

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
6" NEW PVC BLANK PIPE 0 - 100
6" NEW PVC SCREEN PIPE 100 - 240

STATE OF TEXAS WELL REPORT for Tracking #276880

Owner:	**CONOCO PHILLIPS**	Owner Well #:	**JN 2726**
Address:	**4001 Penbrook** **ODESSA , TX 79760**	Grid #:	**46-03-2**
Well Location:	**MENTONE , TX 79754**	Latitude:	**31° 58' 21" N**
Well County:	**Loving**	Longitude:	**103° 40' 54" W**
Elevation:	**No Data**	GPS Brand Used:	**GARMIN GPS III PLUS**
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Date: Started: **1/8/2012**
Completed: **1/8/2012**

Diameter of Hole: Diameter: **8.75 in From Surface To 200 ft**

Drilling Method: **Air Rotary**

Borehole Completion: Gravel Packed From: **0 ft to 15 ft**
Gravel Pack Size: **.02**

Annular Seal Data: 1st Interval: **From 0 ft to 10 ft with 7 BAG CEMENT (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **No Data**
Cemented By: **No Data**
Distance to Septic Field or other Concentrated Contamination: **No Data**
Distance to Property Line: **No Data**
Method of Verification: **No Data**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No Data**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No Data**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information: **R DARRELL CRASS**
PO BOX 60031
MIDLAND , TX 79711

Driller License Number:	**2752**
Licensed Well Driller Signature:	**R DARRELL CRASS**
Registered Driller Apprentice Signature:	**RELLES ALVARADO**
Apprentice Registration Number:	**57809**
Comments:	**13 - 18 NOT APPLICABLE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#276880**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0 - 3 TOPSOIL
3 - 20 CALICHIE
20 - 40 SANDY CLAY
40 - 60 SAND & GRAVEL
60 - 95 SANDY CLAY
95 - 120 GRAVEL
120 - 140 SAND CLAY
140 - 150 SAND
150 - 200 CLAY

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
6" NEW PIPE BLANK 0 - 100
6" NEW PIPE SCREEN 100 - 200

Appendix D

Laboratory Reports

DHL ANALYTICAL

November 17, 2011

Alexis Johnson
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701

TEL: (432) 687-0901
FAX: (432) 687-0456

Order No: 1111076

RE:

Dear Alexis Johnson:

DHL Analytical received 1 sample(s) on 11/9/2011 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-11-7

ACCREDITED IN ACCORDANCE WITH nelac

Table of Contents

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: A. Johnson

DATE: 11-7-11 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: 111076
PROJECT LOCATION OR NAME: _____
LAI PROJECT #: 11-0131-01 COLLECTOR: D. McDonnell

TRRP report? ☐ Yes ☐ No

TIME ZONE: Time zone/State: MST/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☑ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☑ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☑ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDES ☑ ANIONS ☐ ALKALINITY ☐ | Sulfate, Nitrate

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	FIELD NOTES
WindMill	01	11-7-11	1330	W	10	X	X		X	✓	Filtered with 45 per Alexis
											00
TOTAL											

RELINQUISHED BY:(Signature) DATE/TIME 11-7-11 0800 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 11/8/11 530 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.1 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Lone Star Overnight

Airbill No. Z8049199

Lone Star Overnight
800.800.8984
www.lso.com

To: SAMPLE RECEIVING
DHL ANALYTICAL
2300 DOUBLE CREEK DRIVE
ROUND ROCK, TX 78664
(512) 388 - 8222

From: ALEXIS JOHNSON
LARSON AND ASSOCIATES
507 N MARIENFELD
SUITE 200
MIDLAND, TX 79701
(432) 687 - 0901

Service Type: By 10:30am
1D00V

AUS

By 10:30am

QuickCode: DHL
Date Printed: 11/8/2011
Billing Ref 1: 11-0131-01

CUSTODY SEAL
DATE
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical

Sample Receipt Checklist

Client Name **Larson & Associates** Date Received: **11/9/2011**

Work Order Number **1111078** Received by **JB**

Checklist completed by: _____ 11/9/11 Reviewed by _____ 11-T-11

Signature / Date — Initials / Date

Carrier name: LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.1 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? _____ Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments. _____

Corrective Action _____

Page 1 of 1

DHL Analytical Date: 11/17/11

CLIENT: Larson & Associates
Project:
Lab Order: 1111076

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method SW6020 - Metals Analysis
Method SW7470A - Mercury Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method E300 - Anions Analysis
Method M2320 B (18th Edition) - Alkalinity Analysis
Method M2540C (18th Edition) - TDS Analysis

LOG IN

The sample was received and log-in performed on 11/9/11. A total of 1 sample was received. The Time of Collection was Mountain Standard Time. The sample arrived in good condition and was properly packaged. All method blanks, sample duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives.

CLIENT: Larson & Associates
Project:
Lab Order: 1111076

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
1111076-01	Windmill		11/07/11 01:30 PM	11/09/11

CLIENT: Larson & Associates
Project:
Lab Order: 1111076

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1111076-01A	Windmill	11/07/11 01:30 PM	Aqueous	SW5030C	Purge and Trap Water GC	11/09/11 04:52 PM	49109
1111076-01B	Windmill	11/07/11 01:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/09/11 09:07 AM	49092
	Windmill	11/07/11 01:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	11/11/11 08:53 AM	49140
1111076-01C	Windmill	11/07/11 01:30 PM	Aqueous	E300	Anion Preparation	11/09/11 11:00 AM	49099
	Windmill	11/07/11 01:30 PM	Aqueous	E300	Anion Preparation	11/09/11 11:00 AM	49099
	Windmill	11/07/11 01:30 PM	Aqueous	M2320 B	Alkalinity Preparation	11/09/11 01:00 PM	49100
	Windmill	11/07/11 01:30 PM	Aqueous	M2540C	TDS Preparation	11/11/11 04:20 PM	49153

CLIENT: Larson & Associates
Project:
Lab Order: 1111076

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1111076-01A	Windmill	Aqueous	SW8021B	Volatile Organics by GC	49109	1	11/09/11 06:39 PM	GC8_111109B
1111076-01B	Windmill	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	49140	1	11/15/11 06:09 PM	ICP-MS3_111115B
	Windmill	Aqueous	SW7470A	Mercury Filtered (0.45µ)	49092	1	11/10/11 02:11 PM	CETAC_HG_111110B
1111076-01C	Windmill	Aqueous	M2320 B	Alkalinity	49100	1	11/09/11 01:49 PM	TITRATOR_111109B
	Windmill	Aqueous	E300	Anions by IC method - Water	49099	10	11/09/11 11:23 AM	IC_111109A
	Windmill	Aqueous	E300	Anions by IC method - Water	49099	1	11/09/11 11:55 AM	IC_111109A
	Windmill	Aqueous	M2540C	Total Dissolved Solids	49153	1	11/14/11 09:15 AM	WC_111111C

CLIENT: Larson & Associates
Project:
Project No: 11-0131-01
Lab Order: 1111076

Client Sample ID: Windmill
Lab ID: 1111076-01
Collection Date: 11/07/11 01:30 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Volatile Organics by GC		**SW8021B**					**Analyst: DEW**
Benzene	ND	0.000800	0.00200		mg/L	1	11/09/11 06:39 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	11/09/11 06:39 PM
Toluene	ND	0.00200	0.00600		mg/L	1	11/09/11 06:39 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	11/09/11 06:39 PM
Surr: a,a,a-Trifluorotoluene	103	0	87 - 113		%REC	1	11/09/11 06:39 PM
Mercury Filtered (0.45µ)		**SW7470A**					**Analyst: LM**
Mercury	ND	0.0000800	0.000200		mg/L	1	11/10/11 02:11 PM
Dissolved Metals-ICPMS (0.45µ)		**SW6020**					**Analyst: AJR**
Arsenic	ND	0.00200	0.00600		mg/L	1	11/15/11 06:09 PM
Barium	0.178	0.00300	0.0100		mg/L	1	11/15/11 06:09 PM
Cadmium	ND	0.000300	0.00100		mg/L	1	11/15/11 06:09 PM
Chromium	ND	0.00200	0.00600		mg/L	1	11/15/11 06:09 PM
Lead	ND	0.000300	0.00100		mg/L	1	11/15/11 06:09 PM
Selenium	0.00283	0.00200	0.00600		mg/L	1	11/15/11 06:09 PM
Silver	ND	0.00100	0.00200		mg/L	1	11/15/11 06:09 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Chloride	35.3	0.300	1.00		mg/L	1	11/09/11 11:55 AM
Nitrate-N	2.71	0.100	0.500		mg/L	1	11/09/11 11:55 AM
Sulfate	190	10.0	30.0		mg/L	10	11/09/11 11:23 AM
Alkalinity		**M2320 B**					**Analyst: JBC**
Alkalinity, Bicarbonate (As CaCO3)	175	10.0	20.0		mg/L	1	11/09/11 01:49 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	11/09/11 01:49 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	11/09/11 01:49 PM
Alkalinity, Total (As CaCO3)	175	10.0	20.0		mg/L	1	11/09/11 01:49 PM
Total Dissolved Solids		**M2540C**					**Analyst: JCG**
Total Dissolved Solids (Residue, Filterable)	589	10.0	10.0		mg/L	1	11/14/11 09:15 AM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
	B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
	C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
	DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
	E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
			S	Spike Recovery outside control limits

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_111109B

Sample ID:	LCS-49109	Batch ID:	49109		TestNo:		SW8021B		Units:		mg/L
SampType:	LCS	Run ID:	GC8_111109B		Analysis Date:		11/09/11 05:57 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		0.0507	0.00200	0.0500	0	101	81	125			
Toluene		0.0516	0.00600	0.0500	0	103	84	123			
Ethylbenzene		0.0513	0.00600	0.0500	0	103	83	119			
Xylenes, Total		0.153	0.00900	0.150	0	102	81	117			
Surr: a,a,a-Trifluorotoluene		195		200.0		97.3	87	113			

Sample ID:	MB-49109	Batch ID:	49109		TestNo:		SW8021B		Units:		mg/L
SampType:	MBLK	Run ID:	GC8_111109B		Analysis Date:		11/09/11 06:17 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		ND	0.00200								
Toluene		ND	0.00600								
Ethylbenzene		ND	0.00600								
Xylenes, Total		ND	0.00900								
Surr: a,a,a-Trifluorotoluene		194		200.0		96.8	87	113			

Sample ID:	1111076-01AMS	Batch ID:	49109		TestNo:		SW8021B		Units:		mg/L
SampType:	MS	Run ID:	GC8_111109B		Analysis Date:		11/09/11 07:00 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		0.0496	0.00200	0.0500	0	99.3	81	125			
Toluene		0.0500	0.00600	0.0500	0	99.9	84	123			
Ethylbenzene		0.0494	0.00600	0.0500	0	98.7	83	119			
Xylenes, Total		0.148	0.00900	0.150	0	98.4	81	117			
Surr: a,a,a-Trifluorotoluene		193		200.0		96.3	87	113			

Sample ID:	1111076-01AMSD	Batch ID:	49109		TestNo:		SW8021B		Units:		mg/L
SampType:	MSD	Run ID:	GC8_111109B		Analysis Date:		11/09/11 07:21 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		0.0527	0.00200	0.0500	0	105	81	125	5.94	20	
Toluene		0.0529	0.00600	0.0500	0	106	84	123	5.73	20	
Ethylbenzene		0.0505	0.00600	0.0500	0	101	83	119	2.30	20	
Xylenes, Total		0.150	0.00900	0.150	0	100	81	117	1.62	20	
Surr: a,a,a-Trifluorotoluene		203		200.0		102	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_111109B

Sample ID:	ICV-111109	Batch ID:	R57766		TestNo:		SW8021B		Units:		mg/L
SampType:	ICV	Run ID:	GC8_111109B		Analysis Date:		11/09/11 05:36 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		0.0929	0.00200	0.100	0	92.9	80	120			
Toluene		0.0931	0.00600	0.100	0	93.1	80	120			
Ethylbenzene		0.0943	0.00600	0.100	0	94.3	80	120			
Xylenes, Total		0.283	0.00900	0.300	0	94.2	80	120			
Surr: a,a,a-Trifluorotoluene		194		200.0		97.1	87	113			

Sample ID:	CCV1-111109	Batch ID:	R57766		TestNo:		SW8021B		Units:		mg/L
SampType:	CCV	Run ID:	GC8_111109B		Analysis Date:		11/09/11 07:42 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Benzene		0.0542	0.00200	0.0500	0	108	80	120			
Toluene		0.0540	0.00600	0.0500	0	108	80	120			
Ethylbenzene		0.0520	0.00600	0.0500	0	104	80	120			
Xylenes, Total		0.155	0.00900	0.150	0	104	80	120			
Surr: a,a,a-Trifluorotoluene		207		200.0		104	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC_HG_111110B

Sample ID:	MB-49092	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	MBLK	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:36 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		ND	0.000200								

Sample ID:	LCS-49092	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	LCS	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:42 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.00195	0.000200	0.00200	0	97.5	85	115			

Sample ID:	LCSD-49092	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	LCSD	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:44 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.00198	0.000200	0.00200	0	99.0	85	115	1.53	15	

Sample ID:	1111038-01A SD	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	SD	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:52 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0	0.0100	0	0				0	10	

Sample ID:	1111038-01A PDS	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	PDS	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:54 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.0215	0.00200	0.0250	0	86.0	85	115			

Sample ID:	1111038-01A MS	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	MS	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 02:01 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.0186	0.00200	0.0200	0	93.0	80	120			

Sample ID:	1111038-01A MSD	Batch ID:	49092		TestNo:		SW7470A		Units:		mg/L
SampType:	MSD	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 02:03 PM		Prep Date:		11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.0194	0.00200	0.0200	0	97.0	80	120	4.21	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC_HG_111110B

Sample ID:	ICV-111110	Batch ID:	R57788		TestNo:		SW7470A		Units:		mg/L
SampType:	ICV	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:32 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.00385	0.000200	0.00400	0	96.2	90	110			
Sample ID:	CCV1-111110	Batch ID:	R57788		TestNo:		SW7470A		Units:		mg/L
SampType:	CCV	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 01:57 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.00194	0.000200	0.00200	0	97.0	90	110			
Sample ID:	CCV2-111110	Batch ID:	R57788		TestNo:		SW7470A		Units:		mg/L
SampType:	CCV	Run ID:	CETAC_HG_111110B		Analysis Date:		11/10/11 02:21 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Mercury		0.00194	0.000200	0.00200	0	97.0	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_111115B

Sample ID:	MB-49140	Batch ID:	49140		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 05:36 PM		Prep Date:		11/11/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		ND	0.00600								
Barium		ND	0.0100								
Cadmium		ND	0.00100								
Chromium		ND	0.00600								
Lead		ND	0.00100								
Selenium		ND	0.00600								
Silver		ND	0.00200								

Sample ID:	LCS-49140	Batch ID:	49140		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 05:41 PM		Prep Date:		11/11/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0.202	0.00600	0.200	0	101	80	120			
Barium		0.195	0.0100	0.200	0	97.6	80	120			
Cadmium		0.196	0.00100	0.200	0	98.2	80	120			
Chromium		0.198	0.00600	0.200	0	99.0	80	120			
Lead		0.193	0.00100	0.200	0	96.6	80	120			
Selenium		0.194	0.00600	0.200	0	96.8	80	120			
Silver		0.198	0.00200	0.200	0	98.8	80	120			

Sample ID:	LCSD-49140	Batch ID:	49140		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 05:47 PM		Prep Date:		11/11/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0.199	0.00600	0.200	0	99.4	80	120	1.70	15	
Barium		0.195	0.0100	0.200	0	97.6	80	120	0.102	15	
Cadmium		0.197	0.00100	0.200	0	98.6	80	120	0.407	15	
Chromium		0.192	0.00600	0.200	0	96.1	80	120	2.97	15	
Lead		0.194	0.00100	0.200	0	97.0	80	120	0.413	15	
Selenium		0.190	0.00600	0.200	0	94.9	80	120	2.03	15	
Silver		0.197	0.00200	0.200	0	98.6	80	120	0.152	15	

Sample ID:	1111086-06A SD	Batch ID:	49140		TestNo:		SW6020		Units:		mg/L
SampType:	SD	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 06:04 PM		Prep Date:		11/11/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0	0.0300	0	0				0	10	
Barium		0.0486	0.0500	0	0.0483				0.557	10	
Cadmium		0	0.00500	0	0.000485				0	10	
Chromium		0	0.0300	0	0				0	10	
Lead		0	0.00500	0	0				0	10	
Selenium		0	0.0300	0	0				0	10	
Silver		0	0.0100	0	0				0	10	

Sample ID:	1111086-06A PDS	Batch ID:	49140		TestNo:		SW6020		Units:		mg/L
SampType:	PDS	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 06:49 PM		Prep Date:		11/11/11

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_111115B

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic	0.227	0.00600	0.200	0	113	75	125			
Barium	0.242	0.0100	0.200	0.0483	97.0	75	125			
Cadmium	0.195	0.00100	0.200	0.000485	97.2	75	125			
Chromium	0.179	0.00600	0.200	0	89.4	75	125			
Lead	0.191	0.00100	0.200	0	95.4	75	125			
Selenium	0.205	0.00600	0.200	0	103	75	125			
Silver	0.194	0.00200	0.200	0	97.0	75	125			

Sample ID:	1111086-06A MS	Batch ID:	49140	TestNo:	SW6020	Units:	mg/L
SampType:	MS	Run ID:	ICP-MS3_111115B	Analysis Date:	11/15/11 06:54 PM	Prep Date:	11/11/11

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic	0.226	0.00600	0.200	0	113	80	120			
Barium	0.247	0.0100	0.200	0.0483	99.3	80	120			
Cadmium	0.198	0.00100	0.200	0.000485	99.0	80	120			
Chromium	0.179	0.00600	0.200	0	89.6	80	120			
Lead	0.193	0.00100	0.200	0	96.4	80	120			
Selenium	0.208	0.00600	0.200	0	104	80	120			
Silver	0.191	0.00200	0.200	0	95.3	80	120			

Sample ID:	1111086-06A MSD	Batch ID:	49140	TestNo:	SW6020	Units:	mg/L
SampType:	MSD	Run ID:	ICP-MS3_111115B	Analysis Date:	11/15/11 07:00 PM	Prep Date:	11/11/11

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic	0.230	0.00600	0.200	0	115	80	120	1.45	15	
Barium	0.243	0.0100	0.200	0.0483	97.4	80	120	1.51	15	
Cadmium	0.197	0.00100	0.200	0.000485	98.3	80	120	0.708	15	
Chromium	0.180	0.00600	0.200	0	90.2	80	120	0.723	15	
Lead	0.195	0.00100	0.200	0	97.5	80	120	1.13	15	
Selenium	0.209	0.00600	0.200	0	104	80	120	0.528	15	
Silver	0.188	0.00200	0.200	0	94.1	80	120	1.27	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_111115B

Sample ID:	ICV1-111115	Batch ID:	R57853		TestNo:		SW6020		Units:		mg/L
SampType:	ICV	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 01:09 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0.0962	0.00600	0.100	0	96.2	90	110			
Barium		0.0960	0.0100	0.100	0	96.0	90	110			
Cadmium		0.0974	0.00100	0.100	0	97.4	90	110			
Chromium		0.100	0.00600	0.100	0	100	90	110			
Lead		0.0960	0.00100	0.100	0	96.0	90	110			
Selenium		0.0976	0.00600	0.100	0	97.6	90	110			
Silver		0.104	0.00200	0.100	0	104	90	110			

Sample ID:	CCV2-111115	Batch ID:	R57853		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 04:48 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0.205	0.00600	0.200	0	103	90	110			
Barium		0.196	0.0100	0.200	0	98.2	90	110			
Cadmium		0.200	0.00100	0.200	0	100	90	110			
Chromium		0.192	0.00600	0.200	0	96.1	90	110			
Lead		0.193	0.00100	0.200	0	96.6	90	110			
Selenium		0.199	0.00600	0.200	0	99.7	90	110			
Silver		0.201	0.00200	0.200	0	101	90	110			

Sample ID:	CCV3-111115	Batch ID:	R57853		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS3_111115B		Analysis Date:		11/15/11 07:17 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Arsenic		0.210	0.00600	0.200	0	105	90	110			
Barium		0.189	0.0100	0.200	0	94.6	90	110			
Cadmium		0.192	0.00100	0.200	0	96.2	90	110			
Chromium		0.194	0.00600	0.200	0	96.8	90	110			
Lead		0.186	0.00100	0.200	0	93.0	90	110			
Selenium		0.195	0.00600	0.200	0	97.6	90	110			
Silver		0.195	0.00200	0.200	0	97.4	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: IC_111109A

Sample ID:	LCS-49099	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	LCS	Run ID:	IC_111109A		Analysis Date:		11/09/11 09:25 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Chloride		10.2	1.00	10.00	0	102	90	110		
Nitrate-N		5.25	0.500	5.000	0	105	90	110		
Sulfate		30.8	3.00	30.00	0	103	90	110		

Sample ID:	LCSD-49099	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	LCSD	Run ID:	IC_111109A		Analysis Date:		11/09/11 09:37 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Chloride		10.2	1.00	10.00	0	102	90	110	0.124	20
Nitrate-N		5.27	0.500	5.000	0	105	90	110	0.309	20
Sulfate		30.8	3.00	30.00	0	103	90	110	0.026	20

Sample ID:	MB-49099	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	MBLK	Run ID:	IC_111109A		Analysis Date:		11/09/11 09:49 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Chloride		ND	1.00							
Nitrate-N		ND	0.500							
Sulfate		ND	3.00							

Sample ID:	1111073-01D MS	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	MS	Run ID:	IC_111109A		Analysis Date:		11/09/11 10:25 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Nitrate-N		5.46	0.500	5.000	0.4300	101	90	110		
Sulfate		59.2	3.00	30.00	28.11	104	90	110		

Sample ID:	1111073-01D MSD	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	MSD	Run ID:	IC_111109A		Analysis Date:		11/09/11 10:37 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Nitrate-N		5.47	0.500	5.000	0.4300	101	90	110	0.055	20
Sulfate		58.8	3.00	30.00	28.11	102	90	110	0.755	20

Sample ID:	1111073-01D MS	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	MS	Run ID:	IC_111109A		Analysis Date:		11/09/11 11:00 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Chloride		176	10.0	100.0	78.67	97.4	90	110		

Sample ID:	1111073-01D MSD	Batch ID:	49099		TestNo:		E300		Units:	mg/L
SampType:	MSD	Run ID:	IC_111109A		Analysis Date:		11/09/11 11:12 AM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Chloride		176	10.0	100.0	78.67	97.4	90	110	0.000	20

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: IC_111109A

Sample ID:	ICV-111109	**Batch ID:**	R57758		**TestNo:**		E300			**Units:**	mg/L
SampType:	ICV	**Run ID:**	IC_111109A		**Analysis Date:**		11/09/11 09:08 AM			**Prep Date:**	
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Chloride		25.9	1.00	25.00	0	104	90	110			
Nitrate-N		13.4	0.500	12.50	0	107	90	110			
Sulfate		79.3	3.00	75.00	0	106	90	110			

Sample ID:	CCV1-111109	**Batch ID:**	R57758		**TestNo:**		E300			**Units:**	mg/L
SampType:	CCV	**Run ID:**	IC_111109A		**Analysis Date:**		11/09/11 11:43 AM			**Prep Date:**	
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Chloride		10.2	1.00	10.00	0	102	90	110			
Nitrate-N		5.28	0.500	5.000	0	106	90	110			
Sulfate		31.2	3.00	30.00	0	104	90	110			

Sample ID:	CCV2-111109	**Batch ID:**	R57758		**TestNo:**		E300			**Units:**	mg/L
SampType:	CCV	**Run ID:**	IC_111109A		**Analysis Date:**		11/09/11 12:06 PM			**Prep Date:**	
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Chloride		10.2	1.00	10.00	0	102	90	110			
Nitrate-N		5.24	0.500	5.000	0	105	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_111109B

Sample ID:	LCS-49100	**Batch ID:**	49100		**TestNo:**		M2320 B		**Units:**		mg/L
SampType:	LCS	**Run ID:**	TITRATOR_111109B		**Analysis Date:**		11/09/11 01:36 PM		**Prep Date:**		11/09/11
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Alkalinity, Total (As CaCO3)		50.8	20.0	50.00	0	102	74	129			

Sample ID:	MB-49100	**Batch ID:**	49100		**TestNo:**		M2320 B		**Units:**		mg/L
SampType:	MBLK	**Run ID:**	TITRATOR_111109B		**Analysis Date:**		11/09/11 01:38 PM		**Prep Date:**		11/09/11
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Alkalinity, Bicarbonate (As CaCO3)		ND	20.0								
Alkalinity, Carbonate (As CaCO3)		ND	20.0								
Alkalinity, Hydroxide (As CaCO3)		ND	20.0								
Alkalinity, Total (As CaCO3)		ND	20.0								

Sample ID:	1111073-01D DUP	**Batch ID:**	49100		**TestNo:**		M2320 B		**Units:**		mg/L
SampType:	DUP	**Run ID:**	TITRATOR_111109B		**Analysis Date:**		11/09/11 01:45 PM		**Prep Date:**		11/09/11
Analyte		**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Alkalinity, Bicarbonate (As CaCO3)		94.9	20.0	0	95.40				0.525	20	
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)		94.9	20.0	0	95.40				0.525	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_111109B

Sample ID:	ICV-111109	Batch ID:	R57760		TestNo:		M2320 B		Units:	mg/L
SampType:	ICV	Run ID:	TITRATOR_111109B		Analysis Date:		11/09/11 01:32 PM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)		6.08	20.0	0						
Alkalinity, Carbonate (As CaCO3)		93.8	20.0	0						
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0						
Alkalinity, Total (As CaCO3)		99.8	20.0	100.0	0	99.8	98	102		

Sample ID:	CCV-111109	Batch ID:	R57760		TestNo:		M2320 B		Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_111109B		Analysis Date:		11/09/11 01:54 PM		Prep Date:	11/09/11
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)		9.28	20.0	0						
Alkalinity, Carbonate (As CaCO3)		90.7	20.0	0						
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0						
Alkalinity, Total (As CaCO3)		100	20.0	100.0	0	100	90	110		

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1111076
Project:

ANALYTICAL QC SUMMARY REPORT

RunID: WC_111111C

Sample ID:	LCS-49153	Batch ID:	49153		TestNo:	M2540C		Units:	mg/L
SampType:	LCS	Run ID:	WC_111111C		Analysis Date:	11/14/11 09:15 AM		Prep Date:	11/11/11
Analyte		Result	RL	SPK value	Ref Val %REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		826	10.0	745.6	0 111	90	113		

Sample ID:	MB-49153	Batch ID:	49153		TestNo:	M2540C		Units:	mg/L
SampType:	MBLK	Run ID:	WC_111111C		Analysis Date:	11/14/11 09:15 AM		Prep Date:	11/11/11
Analyte		Result	RL	SPK value	Ref Val %REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		ND	10.0						

Sample ID:	1111088-01EDUP	Batch ID:	49153		TestNo:	M2540C		Units:	mg/L
SampType:	DUP	Run ID:	WC_111111C		Analysis Date:	11/14/11 09:15 AM		Prep Date:	11/11/11
Analyte		Result	RL	SPK value	Ref Val %REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		376	10.0	0	375.0			0.266	5

Sample ID:	1111093-01CDUP	Batch ID:	49153		TestNo:	M2540C		Units:	mg/L
SampType:	DUP	Run ID:	WC_111111C		Analysis Date:	11/14/11 09:15 AM		Prep Date:	11/11/11
Analyte		Result	RL	SPK value	Ref Val %REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		742	10.0	0	755.0			1.74	5

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CONTACT INFORMATION
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Albuquerque, NM 87109

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U.S. Army Corps of Engineers
Las Cruces Regulatory Office
505 S. Main St. Suite 142
Las Cruces, NM 88001

Rick Gatewood, 575-556-9939, richard.h.gatewood@usace.army.mil

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Durango Regulatory Office
1970 East 3rd Ave, Suite 109
Durango, CO 81301

Chris Wrbas, 970-259-1947, christopher.r.wrbas@usace.army.mil

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Table 1
Geotechnical Soil Analytical Data Summary
R360 Environmental Solutions, LLC, Avalon Facility
Eddy County, New Mexico
11-0131-01

Borehole ID	Date	(feet)	Soil Type	Density (lb/ft3)	Optimum Moisture (%)	Liquid Limit
BH-6	10/31/2011	35	SM	107	15.0	N/P
BH-7	11/01/2011	25	SM	117.8	11.3	N/P
BH-8	11/01/2011	25	SC	121.6	10.7	50
	11/01/2011	50	CL	103.4	20.8	43
Borehole ID	**Date**	**(feet)**	**Soil Type**	**Plastic limit**	**Plastic index**	**Hydraulic Conductivity**
BH-6	10/31/2011	35	SM	N/P	N/P	8.74E-05
BH-7	11/01/2011	25	SM	N/P	N/P	1.41E-07
BH-8	11/01/2011	25	SC	24	26	1.04E-07
	11/01/2011	50	CL	19	24	6.38E-08

Notes:
All results reported in units shown

Table 1
Soil Analytical Data Summary
R360 Environmental Solutions, LLC, Avalon Facility
Eddy County, New Mexico
11-0131-01

Borehole ID	Date	(feet)	Chloride
NMOCD Delineation Level (mg/Kg):			**250**
BH-1	10/27/2011	0	<4.26
	10/27/2011	10	23.8
	10/27/2011	20	63.7
	10/27/2011	40	42
BH-2	10/27/2011	0	<4.28
	10/27/2011	10	7.92
	10/27/2011	20	53.9
	10/27/2011	40	16.4
	10/27/2011	60	9.26
	10/27/2011	80	5.53
	10/28/2011	100-101	55.0
BH-3	10/28/2011	0-1	4.40
	10/28/2011	10-11	86.1
	10/28/2011	20-21	214
BH-4	10/28/2011	0-1	10.4
	10/28/2011	10-11	46.3
	10/28/2011	39-40	264
BH-5	10/31/2011	0	<4.26
	10/31/2011	10	<4.24
	10/31/2011	20	12.6
	10/31/2011	40	20.9
BH-6	10/31/2011	0	<4.29
	10/31/2011	10	277
	10/31/2011	20	85.6
	10/31/2011	40	148
	10/31/2011	80	31.7
	11/01/2011	100	12.1
	11/01/2011	120	18.1
	11/01/2011	140	22.9
BH-7	11/01/2011	0	4.47
	11/01/2011	10	21.6
	11/01/2011	20	81.9
	11/01/2011	45	14.0
BH-8	11/01/2011	0	3.7
	11/01/2011	10	250
	11/01/2011	20	17.3
	11/01/2011	40	28.9
	11/01/2011	60	5.6
	11/01/2011	80	4.1
	11/01/2011	100	63.2

Notes:
All results reported in milligrams per kilogram (mg/Kg)
"<" Indicates concentration is below the reporting limit (RL).

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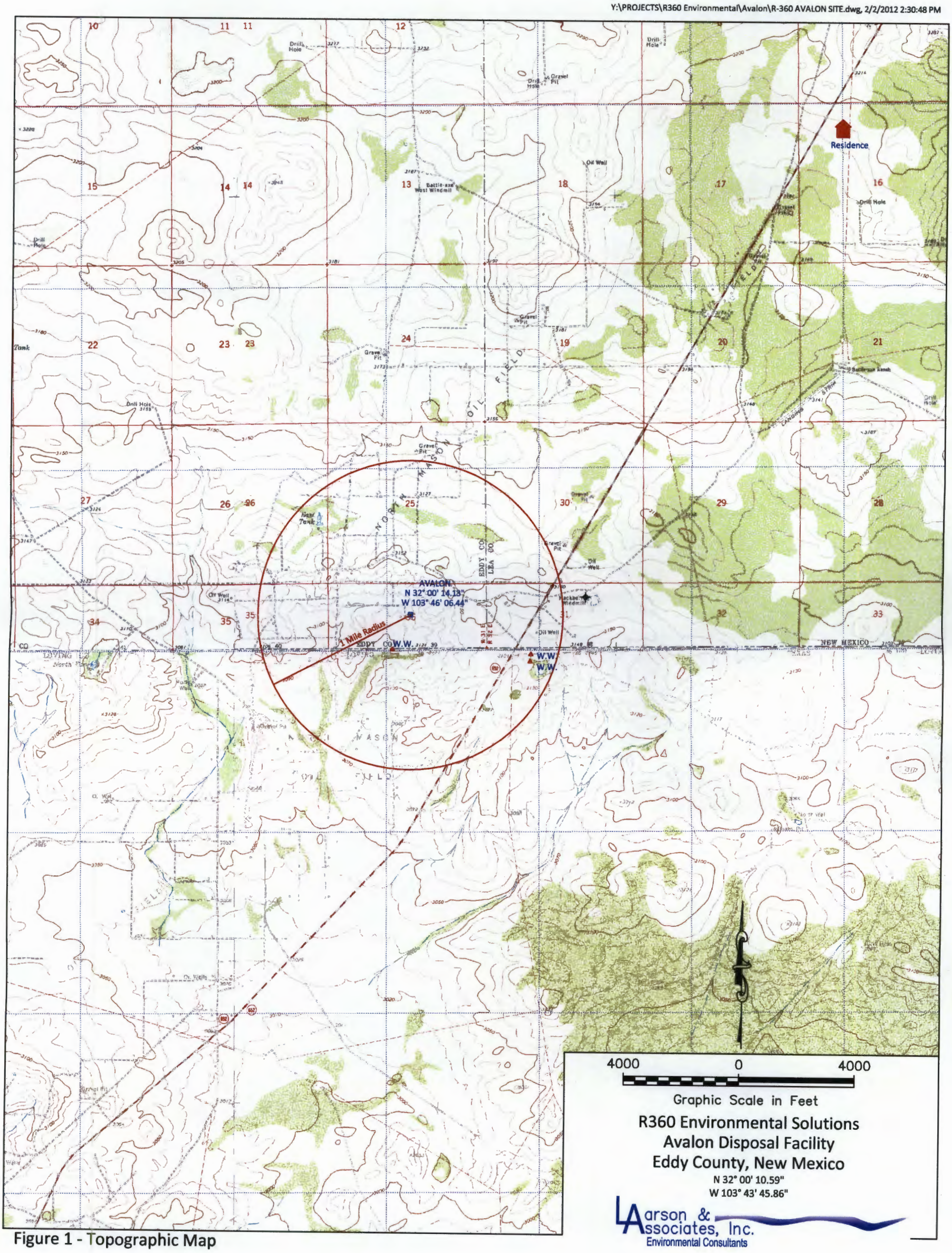

Figure 1 - Topographic Map

Y:\PROJECTS\R360 Environmental\Avalon\R-360 AVALON SITE.dwg, 1/31/2012 10:51:30 AM

Approximate Watershed Break

5242'

680'

1367'

State Line Road

GLO Marker

GLO Marker

Water Treatment Plant (11 Acres)

Pond (3 Acres)

Pond (3 Acres)

Pond (3 Acres)

23 Acres

705'

700'

735'

Road

Pete Milk Russell 35 Federal #2 Injection Well

Texaco "AG" #2

Getty Oil "AG" #2 P&A SWD

187'

Road

Liquids Unloading Tank Battery

Solids Unloading Tank Battery

DCP Gas Line

GAS

Future Development

Texaco Eddy State "AG" Tank Battery

2100'

2200'

Russell 35 Federal #1

Texaco "AG" #3

5 Acre LF Cell

7.5 Acre LF Cell

1400'

GLO Marker

Orla Road

Legend

- ◉ - Exploratory Boring, October-November 2011
- ○ - Active SWD Location
- ● - Producing Oil Well Location
- ⌀ - Plugged and Abandoned SWD Well Location
- ▲ - Water Well Location
- ⌖ - Windmill Location

600 0 600

Graphic Scale in Feet

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico

N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Figure - Site Proposal

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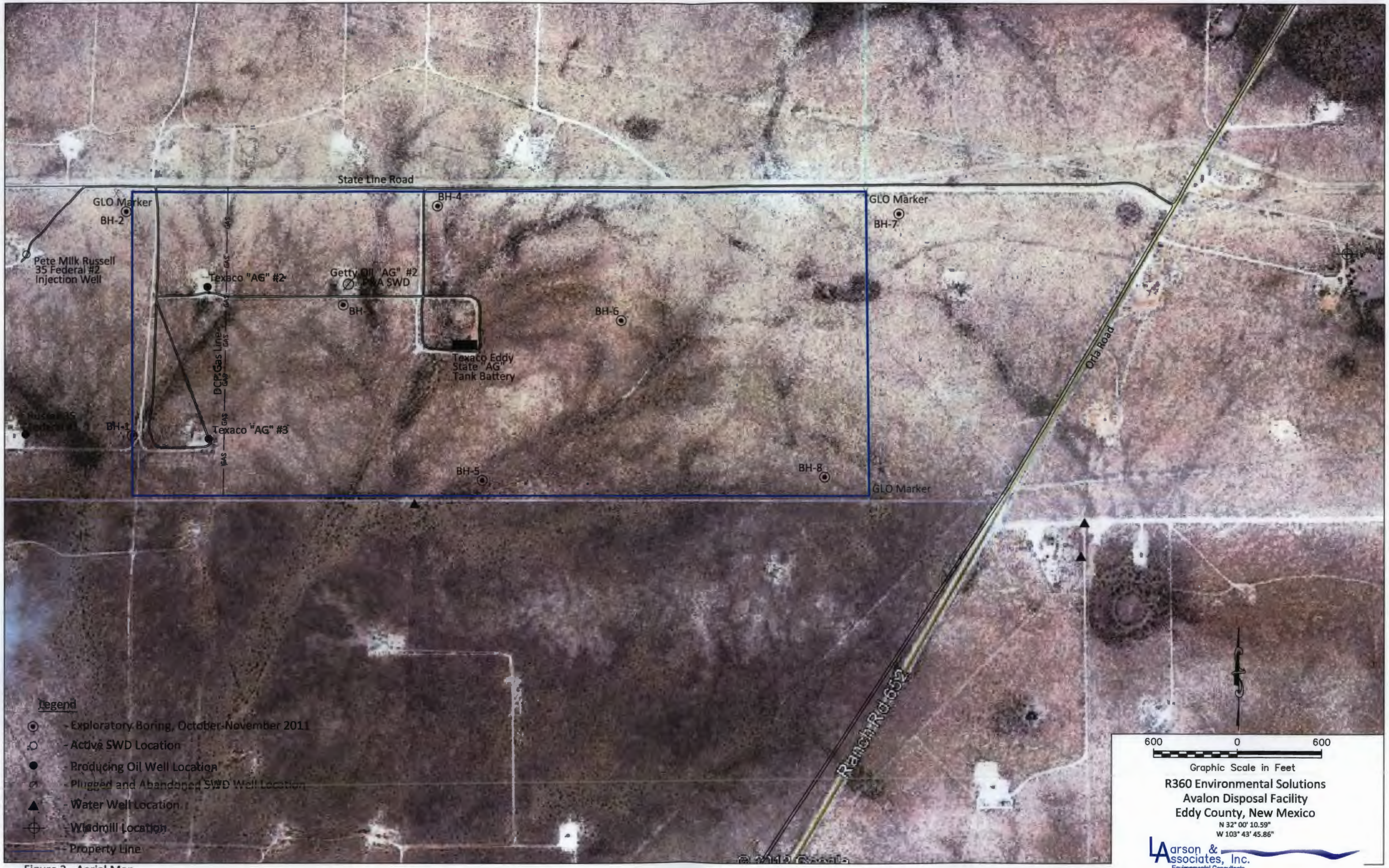

Figure 2 - Aerial Map

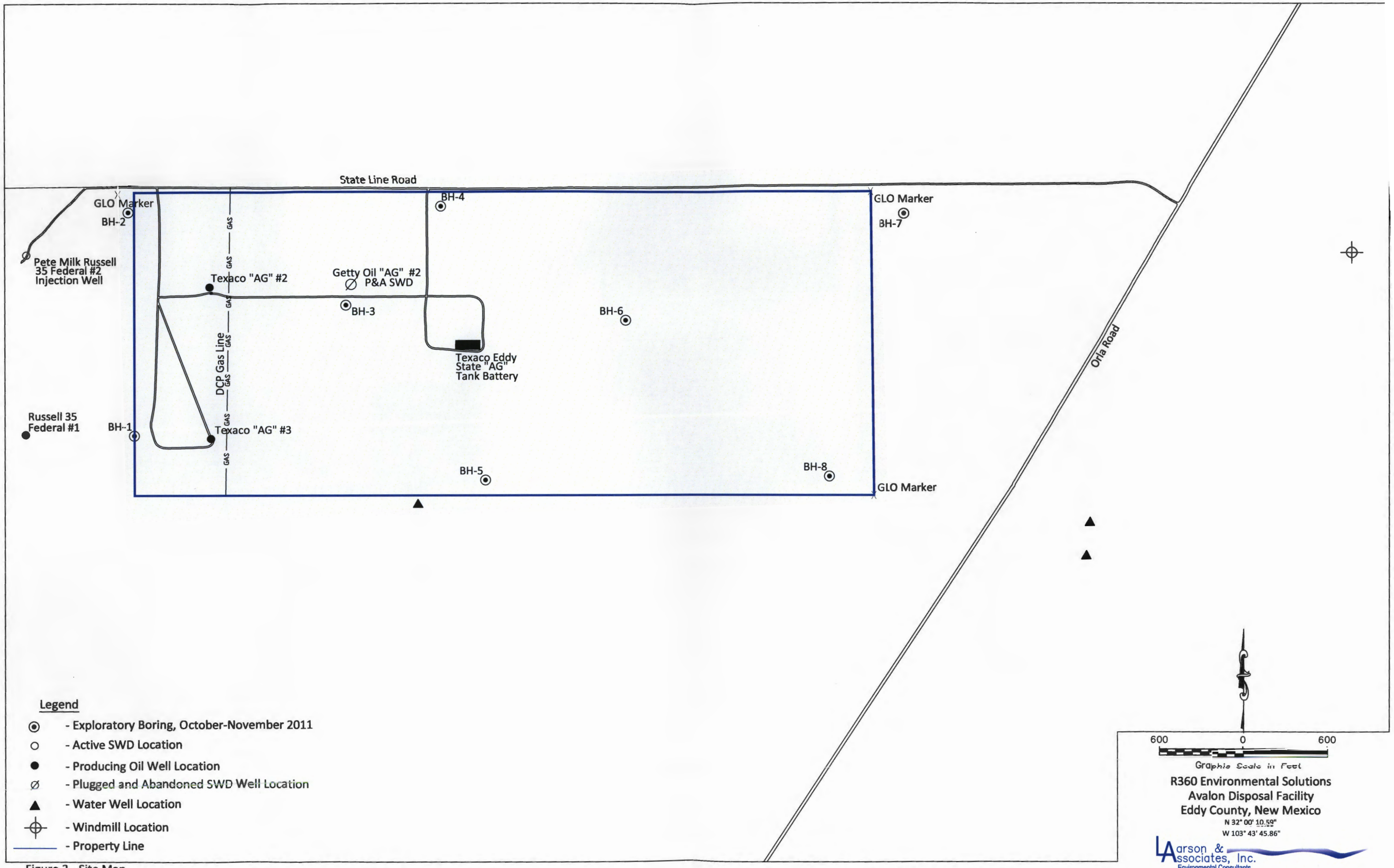

Figure 3 - Site Map

Y:\PROJECTS\R360 Environmental\Avalon\R-360 AVALON SITE.dwg, 1/26/2012 9:20:34 AM

State Line Road

GLO Marker

BH-2 A

B BH-4

Proposed Facility Property Line (Approximate)

GLO Marker

A' C' BH-7

Pete Milk Russell 35 Federal #2 Injection Well

Texaco "AG" #2

Getty Oil "AG" #2 P&A SWD

BH-3

BH-6

DCP Gas Line

GAS

Texaco Eddy State "AG" Tank Battery

Ona Road

Russell 35 Federal #1

BH-1 D

Texaco "AG" #3

BH-5 C

BH-8 B' D'

GLO Marker

Proposed Facility Property Line (Approximate)

Legend

- ⦿ - Exploratory Boring, October-November 2011
- ○ - Active SWD Location
- ● - Producing Oil Well Location
- ⌀ - Plugged and Abandoned SWD Well Location
- ▲ - Water Well Location
- ⌖ - Windmill Location

A ——— A' - Cross Section Line

600 0 600

Graphic Scale in Feet

R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

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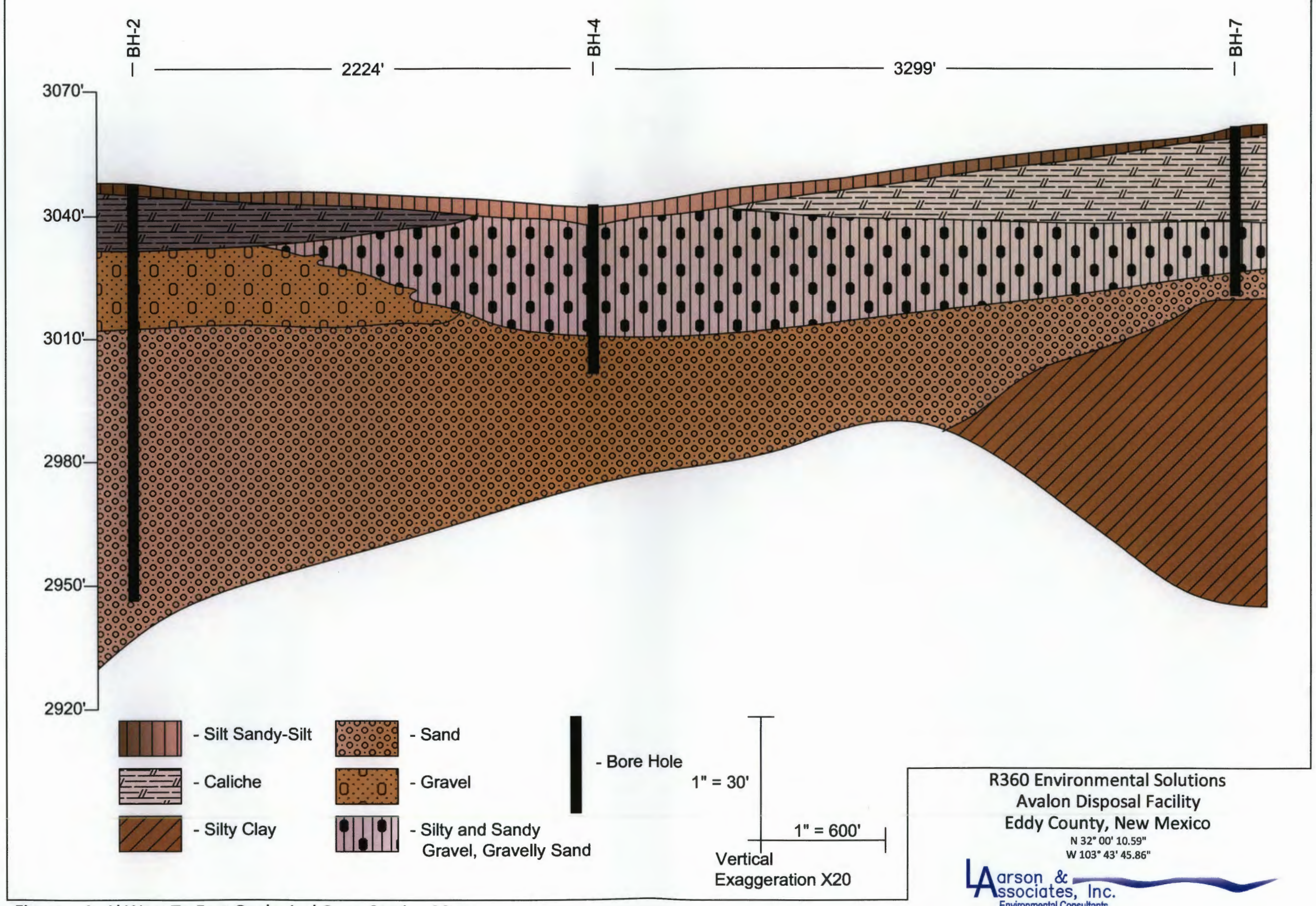
Figure 4 - Cross Section Map

Y:\PROJECTS\R360 Environmental\Avalon\Cross Sections.dwg, 1/26/2012 9:24:56 AM



R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

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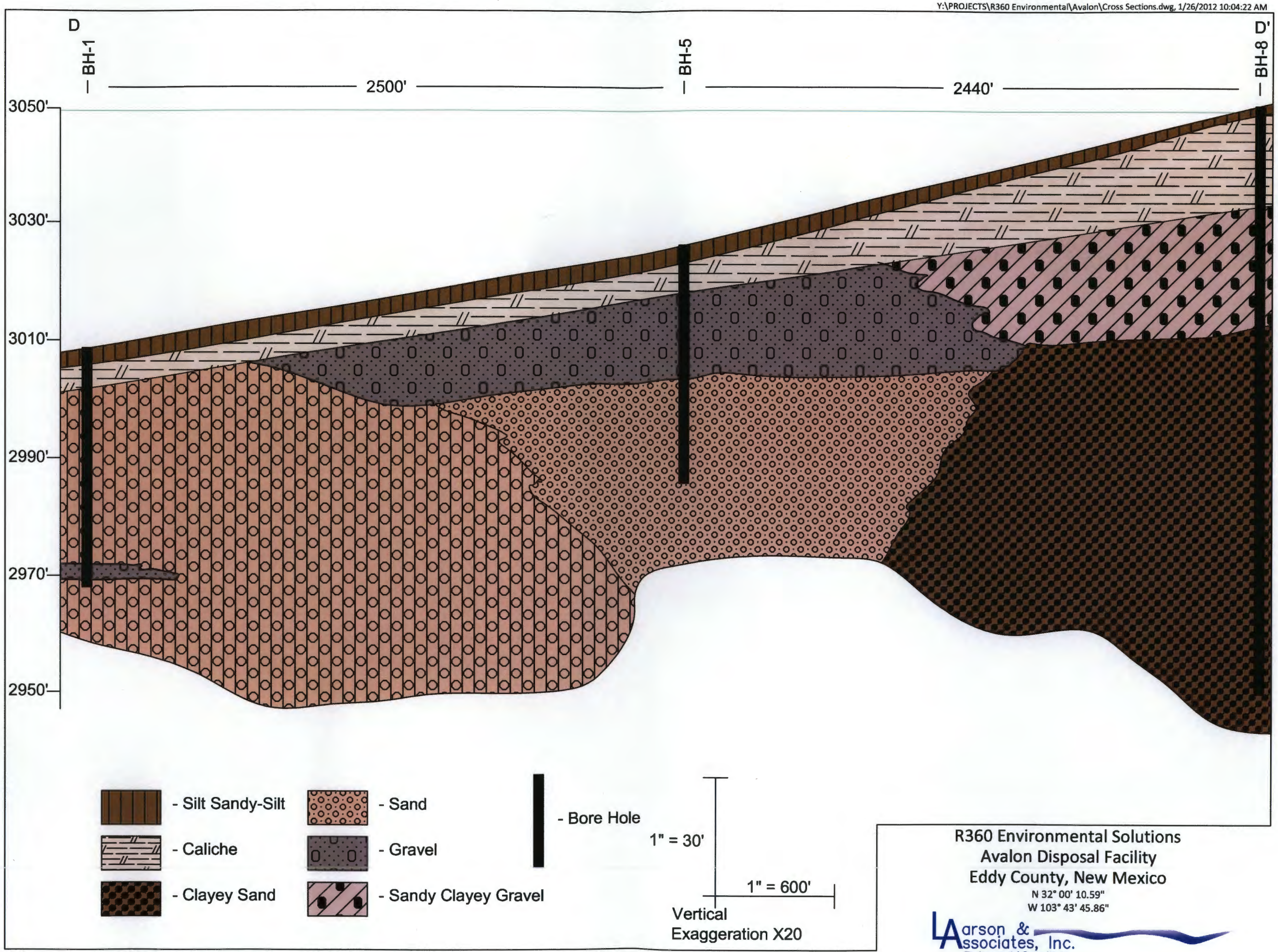
Figure - A- A' West To East Geological Cross Section Map

Y:\PROJECTS\R360 Environmental\Avalon\Cross Sections.dwg, 1/26/2012 10:04:22 AM



R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

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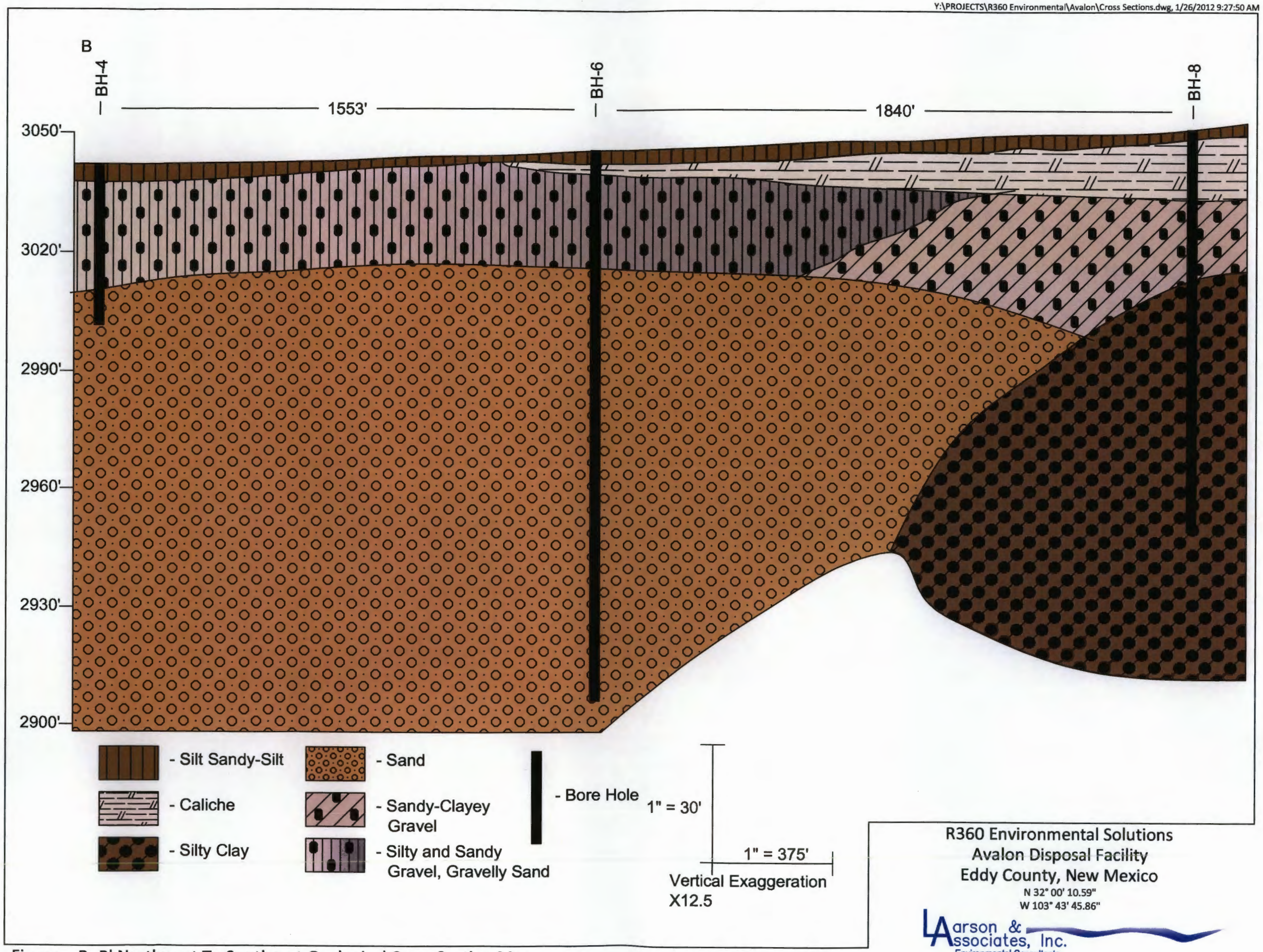
Figure - D- D' West To East Geological Cross Section Map



R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

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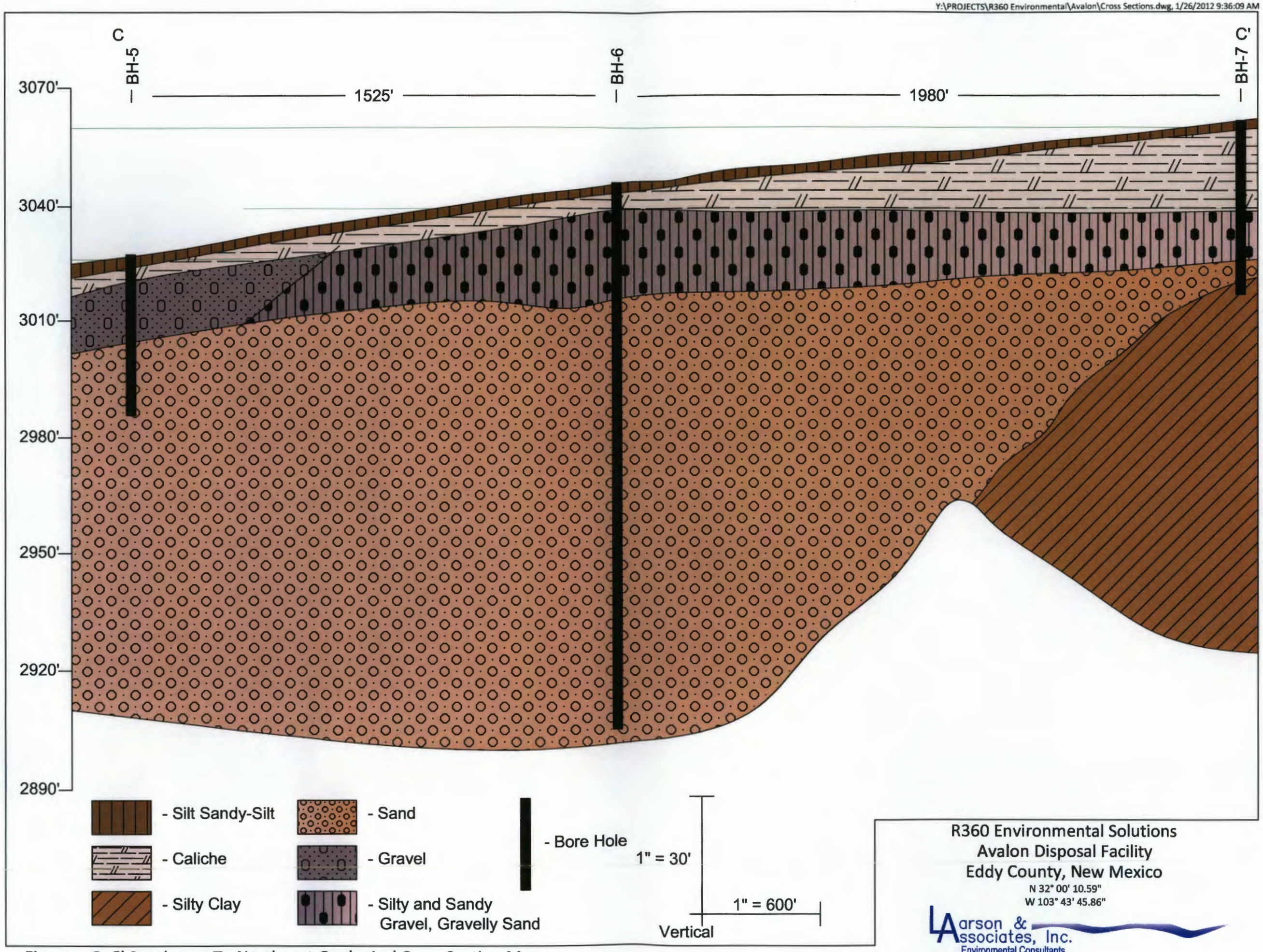
Figure - B- B' Northwest To Southeast Geological Cross Section Map

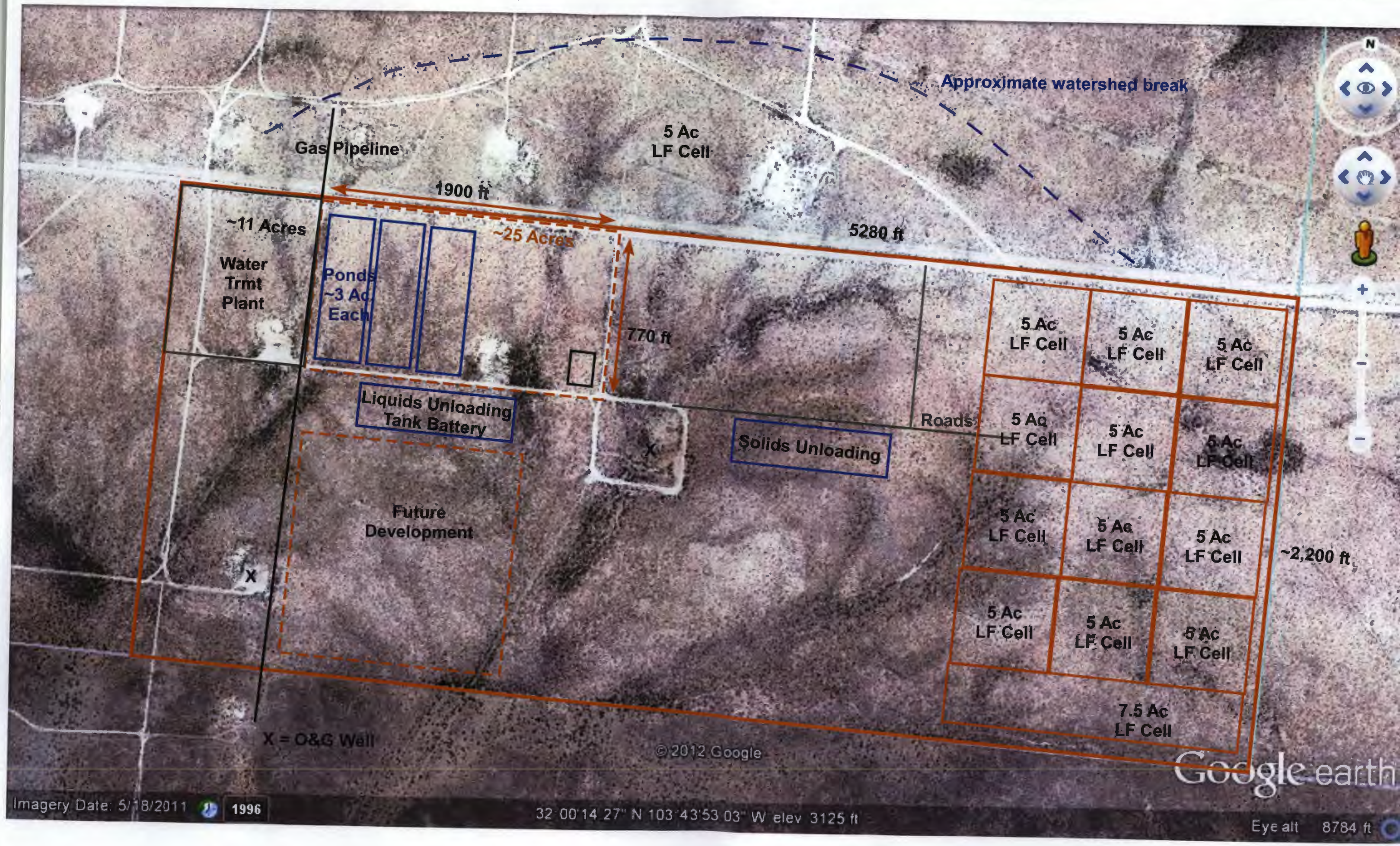
Y:\PROJECTS\R360 Environmental\Avalon\Cross Sections.dwg, 1/26/2012 9:36:09 AM



R360 Environmental Solutions
Avalon Disposal Facility
Eddy County, New Mexico
N 32° 00' 10.59"
W 103° 43' 45.86"

Larson & Associates, Inc.
Environmental Consultants

Figure - C- C' Southwest To Northeast Geological Cross Section Map


Approximate watershed break
Gas Pipeline
5 Ac
LF Cell
1900 ft
~11 Acres
Water
Trmt
Plant
~25 Acres
Ponds
~3 Ac
Each
5280 ft
770 ft
Liquids Unloading
Tank Battery
Solids Unloading
Roads
Future
Development
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
5 Ac
LF Cell
7.5 Ac
LF Cell
~2,200 ft
X
X
X = O&G Well
© 2012 Google
Google earth
Imagery Date: 5/18/2011
1996
32°00'14.27" N 103°43'53.03" W elev 3125 ft
Eye alt 8784 ft