Phase I LSA
Roy Goodwin Property
TF# 7217
11 Old Clyde Road
Lake Junaluska, North Carolina

H&H Job No. UST-058

December 20, 2007

Hart & Hickman

2923 South Tryon Street
Suite 100
Charlotte, NC 28203
704-586-0007

8601 Six Forks Road
Suite 400
Raleigh, NC 27615
919-847-4241

Phase I Limited Site Assessment Information

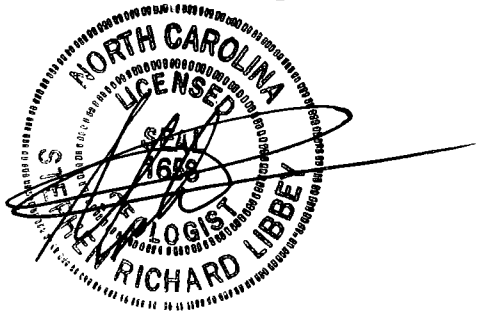
Site Location:
Roy Goodwin Property
11 Old Clyde Road
Lake Junaluska, Haywood County, North Carolina 28745

UST Owner/Operator:
Unknown

Property Owner:
Michael Daggy
293 Thomas Park
Waynesville, North Carolina 28786

General Site Information:
Facility ID Number: N/A
NCDENR Incident Number: FTF # 7217
Site Priority Ranking: High
Land Use Category: Commercial
Latitude/Longitude: 35° 31' 41"N, 82° 57' 35"W (approximate)
Release Discovery Date: January 24, 1992
Estimated Quantity of Release: Unknown
Cause/Source of Release: Two 750-gallon gasoline USTs

I, Stephen Libbey, PG, a Professional Geologist for Hart & Hickman, PC, do certify that the information contained in this report is correct and accurate to the best of my knowledge.



Hart & Hickman, PC is licensed to practice geology/engineering in North Carolina. The certification numbers of the company are C-245/C-1269.

Hart & Hickman, PC

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Phase I Limited Site Assessment
Roy Goodwin Property
11 Old Clyde Road
Lake Junaluska, Haywood County, North Carolina

H&H Job No. UST-058

1.0 Executive Summary

This Phase I Limited Site Assessment (LSA) report documents investigative activities at the Former Roy Goodwin Property located at 11 Old Clyde Road in Lake Junaluska, Haywood County, North Carolina. The site is approximately 0.42 acres in area and contains one building that is currently being utilized as glass window business.

According to the North Carolina Department of Environment and Natural Resources' (NCDENR) files for the site, the subject site formerly operated as service station that contained two 750-gallon gasoline underground storage tanks (UST). The tanks were last used in the late 1950's.

In 1992, as part of proposed road widening activities, the North Carolina Department of Transportation (NCDOT) conducted soil sampling and a geophysical survey at the site. The results of the geophysical survey revealed that four USTs were potentially located on-site. Soil sampling results using purge and trap Method 5030 indicated that site soils contained a petroleum hydrocarbon blend with a distillation range similar to gasoline. Soil concentrations ranged from 57 mg/kg to 200 mg/kg.

In December 1993, Delta Environmental Consultants, Inc. (Delta) completed UST closure activities at the site. The two 750-gallon gasoline USTs were removed from the ground. The other two suspected USTs could not be located. Approximately 650 gallons of liquid was removed by Holston Used Oil Recycling prior to removing the tanks. Approximately 120 tons of

impacted soils were removed during the UST removal activities and stockpiled on-site. The stockpiled soils were transported off-site for disposal in January 1994.

Four closure samples (two per tank) were collected by Delta and sent to CTE Laboratories, Inc. for analysis. The soil samples were analyzed for gasoline and diesel range total petroleum hydrocarbons (TPH-GRO and TPH-DRO) according to EPA Methods 5030 and 3550. TPH-GRO was detected at concentrations ranging from 55.5 milligrams per kilogram (mg/kg) to 14,200 mg/kg and TPH-DRO concentrations were all non-detect.

Land Use/Risk Characterization

The subject site qualifies as a high risk site due to the use of water supply wells for drinking water purposes in the surrounding area. The site also meets the commercial description due to the current use of the property. Three water supply wells (WSW-1 through WSW-3) were found within 1,000 ft of the source area. WSW-1 is used for drinking water purposes, and WSW-2 is no longer used and has not been abandoned. The current status of WSW-3 is unknown. Municipal water is currently available to all properties within the search radius.

An unnamed tributary of Richland Creek is located approximately 490 ft southwest of the source area. Richland Creek is located approximately 540 ft west of the source area. Richland Creek is designated as a "Class C" surface water body. Lake Junaluska is located approximately 1,300 ft southwest of the source area.

LSA Sampling and Results

Based on LSA sampling in the vicinity of the two former 750-gallon gasoline USTs, thirteen target analytes were detected at concentrations that exceed the soil-to-ground water MSCCs and two target analytes were detected at concentrations exceeding the residential MSCCs. None of the detected analytes exceed commercial/industrial MSCCs. Ten target analytes were detected in the ground water sample from MW-1 above the ground water standards, but below the GCLs.

Conclusion

Based upon the LSA sampling results, H&H recommends a monitored natural attenuation approach for the subject site.

2.0 Introduction and Site History

This Phase I Limited Site Assessment (LSA) report documents investigative activities at the Former Roy Goodwin Property located at 11 Old Clyde Road in Lake Junaluska, Haywood County, North Carolina. A Site Location Map is provided as Figure 1, and a Site Plan is provided as Figure 2. Site photos are provided in Appendix A. The site is approximately 0.42 acres in area and contains one building that is currently being utilized as glass window business.

According to the North Carolina Department of Environment and Natural Resources' (NCDENR) files for the site, the subject site formerly operated as service station that contained two 750-gallon gasoline underground storage tanks (UST). The tanks were last used in the late 1950's.

In 1992, as part of proposed road widening activities, the North Carolina Department of Transportation (NCDOT) conducted soil sampling and a geophysical survey at the site. The results of the geophysical survey revealed that four USTs were potentially located on-site. Soil sampling results using purge and trap Method 5030 indicated that site soils contained a petroleum hydrocarbon blend with a distillation range similar to gasoline. Soil concentrations ranged from 57 mg/kg to 200 mg/kg.

In December 1993, Delta Environmental Consultants, Inc. (Delta) completed UST closure activities at the site. The two 750-gallon gasoline USTs were removed from the ground. The other two suspected USTs could not be located. Approximately 650 gallons of liquid was removed by Holston Used Oil Recycling prior to removing the tanks. Approximately 120 tons of impacted soils were removed during the UST removal activities and stockpiled on-site. The stockpiled soils were transported off-site for disposal in January 1994.

Four closure samples (two per tank) were collected by Delta and sent to CTE Laboratories, Inc. for analysis. The soil samples were analyzed for gasoline and diesel range total petroleum hydrocarbons (TPH-GRO and TPH-DRO) according to EPA Methods 5030 and 3550. TPH-GRO was detected at concentrations ranging from 55.5 milligrams per kilogram (mg/kg) to 14,200 mg/kg and TPH-DRO concentrations were all non-detect.

In October 2007, Hart & Hickman, PC conducted Phase I LSA activities at the subject site. The Phase I LSA results are presented herein.

3.0 Receptor Survey

A potential receptor and land use survey was conducted by H&H in October/November 2007 as part of this Phase I LSA. The Land Use Form along with the receptor survey forms are included in Appendix B. Receptor information is discussed below.

3.1 Water Supply Wells and Public Water Availability

H&H conducted a water supply well survey for the area within a 1,000-ft radius of the site in October/November 2007 (Figure 3). H&H conducted the survey by performing site reconnaissance and door to door inquiry. Municipal water is currently available to all properties within the search radius.

During the reconnaissance of the area, three water supply wells (WSW-1 through WSW-3) were found within 1,000 ft of the source area. WSW-1 is used for drinking water purposes, and WSW-2 is no longer used and has not been abandoned. The current status of WSW-3 is unknown. Table 1 includes the property owner information for the water supply wells in the area and Figure 3 depicts their locations.

3.2 Surface Water Bodies

An unnamed tributary of Richland Creek is located approximately 490 ft southwest of the source area. Richland Creek is located approximately 540 ft west of the source area. Richland Creek is designated as a "Class C" surface water body. Lake Junaluska is located approximately 1,300 ft southwest of the source area.

It is important to note that during the LSA project activities, flowing water was observed in a ditch on the west side of the property along Crabtree Road. While the surface water body is not

depicted on the topographic map, H&H suspects the surface water body is perennial in nature due to the shallow depth to ground water at the site of approximately 15 ft.

3.3 Subsurface Structures

Visual observations were made for potential subsurface conduits in the vicinity of the former UST basin. No subsurface utilities were identified near the former UST basin that could serve as potential contaminant conduits.

3.4 Wellhead Protection Areas

According to the DENR Public Water Supply Section website which lists wellhead protection areas and plans in North Carolina, no wellhead protection areas exist within 1,500 ft of the source area.

3.5 Land Use

According to the Haywood County GIS Department, the site is zoned as Open Use District (OU). The Roy Goodwin Property is located in a mixed use area. Properties to the north, south and west are generally commercial in nature. The closest residential property is located approximately 100 ft east of the site. A list of property owners whose properties are contiguous with the subject property is provided in Table 2, and adjacent properties are shown on Figure 3.

4.0 Geology and Hydrogeology

4.1 Regional Geology and Hydrogeology

The subject property is located within the Blue Ridge Physiographic province of North Carolina. The Blue Ridge Physiographic province is generally described as a deeply dissected mountainous area with numerous steep mountain ridges. The Blue Ridge is the highest part of the Appalachian mountain system and trends in a northeast to southwest direction along the eastern coast of the United States.

The Blue Ridge is generally composed of a complex mixture of igneous, sedimentary and metamorphic rock that has repeatedly been squeezed, fractured, faulted and twisted into folds. According to the Geologic Map of North Carolina dated 1985, the basement rock of the site area is composed of biotite gneiss (H. Trapp, 1970).

In general, the bedrock in the Blue Ridge is overlain by a mantle of weathered rock or saprolite. The saprolite consists of unconsolidated clay, silt, and sand with lesser amounts of rock fragments. Due to the range of parent rock types and their variable susceptibility to weathering, the saprolite ranges widely in color, texture, and thickness. Generally, the saprolite is thickest near interstream divides and thins toward streambeds. In profile, the saprolite normally grades from clayey soils near the land surface to highly weathered rock above the competent bedrock.

The occurrence and movement of ground water in the Blue Ridge is within two separate but interconnected water-bearing zones. A shallow water-bearing zone occurs within the saprolite, and a deeper zone occurs within the underlying bedrock.

Ground water in the shallow saprolite zone occurs in the interstitial pore spaces between the grains comprising the saprolitic soils. Ground water in this zone is typically under water table or

unconfined conditions. Ground water movement is generally lateral from recharge areas to small streams, which serve as localized discharge points.

The occurrence and movement of ground water in the underlying water-bearing zone within the crystalline bedrock is controlled by secondary joints, fractures, and faults within the bedrock. On a regional scale, the direction of ground water flow is typically from uplands to major streams and ground water sinks. The saprolite has a higher porosity than the bedrock and serves as a reservoir that supplies water to a network of fractures in the bedrock.

4.2 Site Hydrogeology

Soils encountered during advancement of boring MW-1 were silty clays and clayey silts to a depth of approximately 20 ft. Ground water was encountered at approximately 15 ft below grade.

5.0 Sampling Results and Impacts

5.1 Sample Collection

On October 8, 2007, H&H mobilized to the site to advance a soil boring, collect a soil sample, and install a monitoring well. The boring (MW-1) was advanced at the location of the former two 750-gallon gasoline USTs (Figure 2). The boring was completed as a 20 ft 2-inch diameter monitoring well with 10 ft of well screen. A soil boring log and well construction record are included in Appendix C.

Continuous soil samples from the boring were collected with 5 foot macrocore tubes. The soil samples were screened with an organic vapor analyzer (OVA) and the sample interval with the highest OVA reading was submitted for laboratory analysis. The soil sample was submitted to Prism Laboratories, Inc (Prism) for analysis of volatile organic compounds (VOCs) by EPA Method 5035/8260B including isopropyl ether (IPE) and methyl tert-butyl ether (MTBE) and volatile petroleum hydrocarbons (VPH) by the Massachusetts Method.

On October 10, 2007, H&H mobilized to the site and collected a ground water sample from monitoring well MW-1. Ground water was encountered at a depth of 14.9 ft below top of casing. The ground water sample was submitted to the laboratory for analysis of VOCs by EPA Method 6210D, VPH by the Massachusetts Method, and total lead by EPA Method 6010B using EPA Method 3030C preparation.

The soil and ground water samples were analyzed by Prism, a North Carolina certified laboratory. Laboratory-supplied sample bottles were used for sample collection. A chain-of-custody record was completed for samples collected and included sample description, date collected, time collected, matrix, sample container information, and analyses required. The

chain-of-custody was signed by H&H prior to placement in an iced cooler for hand delivery to the laboratory. Laboratory analytical data sheets are provided in Appendix D.

5.2 Soil Sampling Results

As shown in Table 3, numerous target analytes were detected in soil sample MW-1 (8 ft to 10 ft). C5-C8 aliphatics (1,600 mg/kg), total C9-C18 aliphatics (3,300 mg/kg), total C9-C22 aromatics (1,300 mg/kg), 1,2,4-trimethylbenzene (620 mg/kg), 1,3,5-trimethylbenzene (190 mg/kg), ethylbenzene (290 mg/kg), isopropylbenzene (29 mg/kg), n-butylbenzene (22 mg/kg), n-propylbenzene (130 mg/kg), naphthalene (200 mg/kg), total xylenes (1,270 mg/kg), sec-butylbenzene (9.9 mg/kg), and toluene (19 mg/kg) were detected above their respective soil-to-ground water MSCCs. Of the detected analytes, C5-C8 aliphatics and total C9-C22 aromatics exceeded the residential MSCCs, but were below the commercial/industrial MSCCs.

5.3 Ground Water Sampling Results

As shown in Table 4, numerous petroleum constituents were detected in the ground water sample from MW-1. C5-C8 aliphatics (2,200 µg/l), total C9-C18 aliphatics (9,900 µg/l), total C9-C22 aromatics (6,600 µg/l), ethylbenzene (2,500 µg/l), isopropylbenzene (200 µg/l), n-propylbenzene (510 µg/l), naphthalene (710 µg/l), 1,2,4-trimethylbenzene (3,600 µg/l), 1,3,5-trimethylbenzene (880 µg/l), and total xylenes (6,800 µg/l) were detected at concentrations exceeding the ground water standards. None of the detected analytes exceeded the DENR-defined gross contamination levels (GCLs).

6.0 Conclusions

The subject site qualifies as a high risk site due to the use of water supply wells for drinking water purposes in the surrounding area. The site also meets the commercial description due to the current use of the property. Based on LSA sampling in the vicinity of the two former 750-gallon gasoline USTs, thirteen target analytes were detected at concentrations that exceed the soil-to-ground water MSCCs and two target analytes were detected at concentrations exceeding the residential MSCCs. None of the detected analytes exceed commercial/industrial MSCCs. Ten target analytes were detected in the ground water sample from MW-1 above the ground water standards, but below the GCLs.

Based upon the LSA sampling results, H&H recommends a monitored natural attenuation approach for the subject site.

Table 1
Summary of Water Supply Well Information
Roy Goodwin - FTF #7217
Lake Junaluska, North Carolina
H&H Job No. UST-058

Well ID.	Property Address	Owner	Owner Address	Phone Number	Well Description (Total Depth/Casing Depth)	Status	Distance/Direction from UST basin
WSW-1	66 Lake Shadows Lane	Clyde Reeves	66 Lake Shadows Lane Lake Junaluska, NC 28745	828-452-4919	"Unknown"	Drinking	610'/North
WSW-2	73 Old Clyde Road	Patsy Medford	73 Old Clyde Road Lake Junaluska, NC 28745	828-456-9779	"Unknown"	Not in Use	255'/East
WSW-3	13 Abby Lane	JoAnne Perry	* 13 Abby Lane Waynesville, NC 28786	828-456-4210	Not Available	Unknown	740'/South

Notes:
Information based on Haywood County GIS System data December 2007 and interviews.

*City water for drinking. Joanne was at work, I spoke to a young woman 1/16/08. Windmill over outside power pump pushes H_2O from septic tank to city sewer line. SW Inactive if present. She is unaware of any SW. Lived there since 1994.

Table 2
Summary of Adjacent Properties
Roy Goodwin - FTF #7217
Lake Junaluska, North Carolina
H&H Project No. UST-058

Figure 2 Map ID	Directions from Subject Site	Property Address	Parcel Number	Owner Name	Owners Address	Property Use	Zoning
A	North	Hwy 209 Lake Junaluska, NC	8627200774	Haywood Contracting Co., Inc.	13 Haywood Office Park Lake Junaluska, NC 28745	Commercial	Commercial
B	East	43 Old Clyde Road Lake Junaluska, NC 28745	8627202720	Glenn Medford	43 Old Clyde Road Lake Junaluska, NC 28745 PO Box 112	Single Family Residence	Residential
C	South	20 Old Clyde Road Lake Junaluska, NC 28745	8627201465	Jerry Biller	56 Titleist Drive Waynesville, NC 28786	Manufactured House	Commercial
D	Southwest	Hwy 209 #6 Lake Junaluska, NC	8627200536	Haywood Contracting Co., Inc.	13 Haywood Office Park Lake Junaluska, NC PO Box 28745 37	Vacant	Commercial
E	West	89 Haywood Office Park Lake Junaluska, NC 28745	8627108671	Haywood Contracting Co., Inc.	12 Haywood Office Park Lake Junaluska, NC 28745	Medical Office	Commercial
F	Northwest	461 Crabtree Road Lake Junaluska, NC 28745	8627108861	Toothland LLC	10-B Yorkshire Street Asheville, NC 28803	Offices	Commercial

Notes:
Information taken from Union County GIS website
Refer to Figure 4 for locations

Table 3
Soil Analytical Detections
Roy Goodwin-FTF# 7217
Lake Junaluska, North Carolina
H&H Job No. UST-058

Area of Concern	UST Basin	NC Target Levels		
Sample ID	MW-1	Soil to GW MSCCs	Residential MSCCs	Commercial/ Industrial MSCCs
Depth (feet) Units Date Sampled	8-10 (mg/kg) October 8, 2007	(mg/kg)	(mg/kg)	(mg/kg)
VPH/EPH				
VPH C5-C8 Aliphatics	**1,600**	72	939	24,528
VPH C9-C12 Aliphatics	3,300	NS	NS	NS
EPH C9-C18 Aliphatics	NA	NS	NS	NS
Total C9-C18 Aliphatics	**3,300**	3,300	9,386	245,280
EPH C19-C36 Aliphatics	NA	NS	93,860	NS
EPH C11-C22 Aromatics	NA	NS	NS	NS
VPH C9-C10 Aromatics	1,300	NS	NS	NS
Total C9-C22 Aromatics	**1,300**	34	469	12,264
VOCs (8260)				
1,2,4-Trimethylbenzene	**620**	7.5	782	20,440
1,3,5-Trimethylbenzene	**190**	7.3	782	20,440
Ethylbenzene	**290**	4.6	1,560	40,000
Isopropylbenzene	**29**	1.7	1,564	40,880
n-Butylbenzene	**22**	4.3	626	16,350
n-Propylbenzene	**130**	1.7	626	16,350
Naphthalene	**200**	0.58	313	8,176
Total Xylenes	**1,270**	5	3,129	81,760
p-Isopropyltoluene	6.4	NS	NS	NS
sec-Butylbenzene	**9.9**	3.3	626	16,350
Toluene	**19**	7.3	3,200	82,000

Notes:
Bold indicates a concentration exceeding one or more action levels
EPA Method number follows parameter in parenthesis
Except for VPH/EPH, only compounds detected in at least one sample are shown
VOC = Volatile Organic Compound; NS = Not Specified
MSCC = Maximum Soil Contaminant Concentration; GW = Ground Water
VPH= Volatile Petroleum Hydrocarbons
EPH= Extractable Petroleum Hydrocarbons

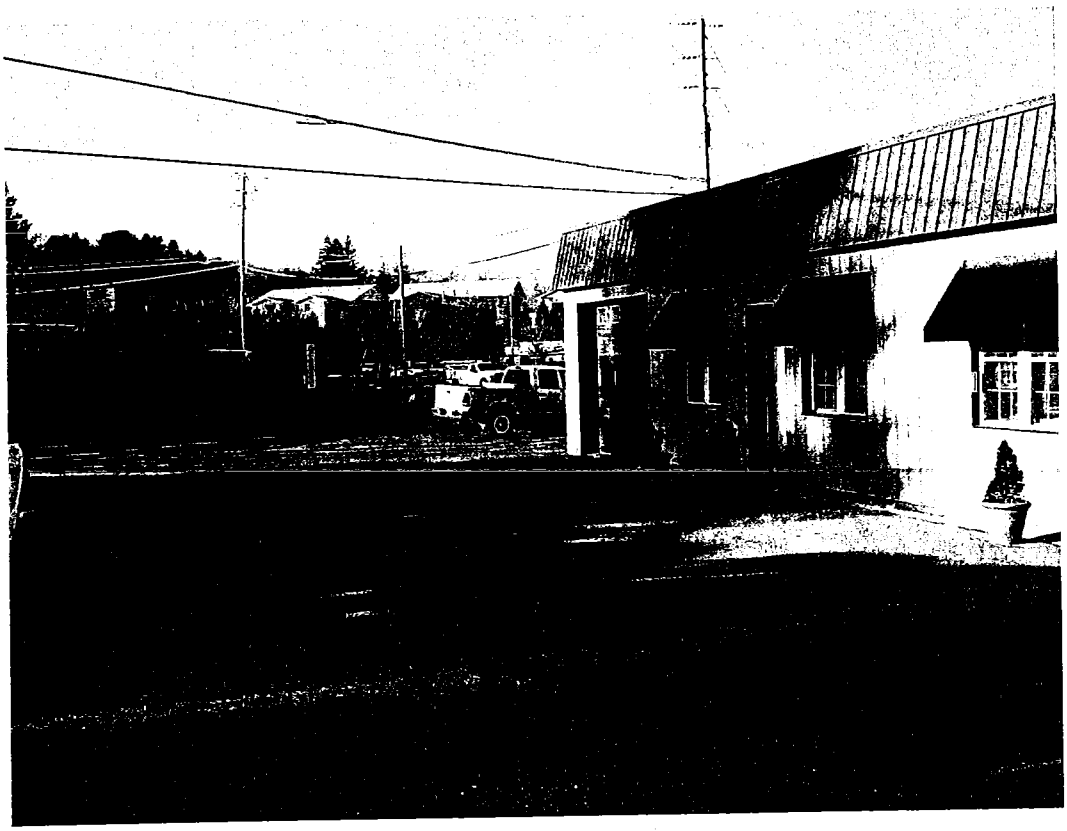
Table 4
Ground Water Analytical Detections
Roy Goodwin -FTF# 7217
Lake Junaluska, North Carolina
H&H Job No. UST-058

Area of Concern	UST Basin	NC Ground Water Standard	Gross Contaminant Level
Sample ID	MW-1		
Sample Date	October 8, 2007		
Units	(µg/l)	(µg/l)	(µg/l)
VPH/EPH			
VPH C5-C8 Aliphatics	**2,200**	420	NS
VPH C9-C12 Aliphatics	9,900	NS	NS
EPH C9-C18 Aliphatics	NA	NS	NS
Total C9-C18 Aliphatics	**9,900**	4,200	NS
EPH C19-C36 Aliphatics	NA	42,000	NS
EPH C11-C22 Aromatics	NA	NS	NS
VPH C9-C10 Aromatics	6,600	NS	NS
Total C9-C22 Aromatics	**6,600**	210	NS
VOCs (6210D)			
n-Butylbenzene	32	70	6,900
Ethylbenzene	**2,500**	550	84,500
Isopropylbenzene	**200**	70	25,000
Toluene	65	1,000	257,500
n-Propylbenzene	**510**	70	30,000
Naphthalene	**710**	21	15,500
p-Isopropyltoluene	68	NS	NS
sec-Butylbenzene	25	70	8,500
1,2,4-Trimethylbenzene	**3,600**	350	28,500
1,3,5-Trimethylbenzene	**880**	350	25,000
Total Xylenes	**6,800**	530	87,500
Lead (3030C)	8.7	15	15,000

Notes:
Bold indicates concentration exceeding action level
EPA Method number follows parameter in parenthesis
Only compounds detected in at least one sample are shown
VOCs = Volatile Organic Compounds
NS = No Standard
VPH= Volatile Petroleum Hydrocarbons
EPH= Extractable Petroleum Hydrocarbons

Appendix A

Site Photos



Photograph 1: Site and MW-1 as viewed from the northeast.

Photograph 2: Site and MW-1 as viewed from the southeast.

Appendix B

Risk Classification/Land Use Form and Supply Well Survey Forms

Limited Site Assessment Risk Classification and Land Use Form

Part I - Groundwater/Surface Water/Vapor Impacts

High Risk

1. Has the discharge or release contaminated any water supply well including any used for non-drinking purposes?

No known water supply wells have been impacted by the release.

2. Is a water supply well used for drinking water located within 1,000 feet of the source area of the discharge or release?

Yes, active water supply wells were identified within 1,000 ft of the source area.

3. Is a water supply well used for any purpose (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release or discharge?

No known water supply wells are located within 250 ft of the source area.

4. Does groundwater within 500 feet of the source area of the discharge or release have the potential for future use in that there is no other source of water supply other than the groundwater?

Municipal water is available to the site and properties within 500 ft of the site.

5. Do vapors from the discharge or release pose a threat of explosion because of accumulation of the vapors in a confined space, or pose any other serious threat to public health, public safety or the environment?

Vapors from the discharge or release do not pose a threat of explosion and do not pose a serious threat to public health, public safety, or the environment.

6. Are there any other factors that would cause the discharge or release to pose an imminent danger to public health, public safety, or the environment?

No other factors would cause the discharge or release to pose an imminent danger to public health, public safety, or the environment.

Intermediate Risk

7. Is a surface water body located within 500 feet of the source area of the discharge or release?

Yes, an unnamed tributary of Richland Creek is located approximately 490 ft southwest of the source area. Richland Creek is located approximately 540 ft west of the source area. Richland Creek is designated as a "Class C" surface water body. It is important to note that during the LSA project activities, flowing water was observed in a ditch on the west side of the property along Crabtree Road. While the surface water body is not depicted on the topographic map, H&H suspects the surface water body is perennial in nature due to the shallow depth to ground water of approximately 15 ft.

8. Is the source area of the discharge or release located within a designated wellhead protection area as defined in 42 USC 300h-7(e)?

No, the source area is not located within a designated wellhead protection area.

9. Is the discharge or release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? If yes, is the source area of the discharge or release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water?

No, the discharge or release is not located in the Coastal Plain physiographic region.

10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels established (see Table 3) by the Department?

No, compound concentrations do not exceed their respective gross contamination levels.

Part II - Land Use

Property Containing Source Area of Discharge or Release

1. Does the property contain one or more primary or secondary residences (permanent or temporary)?

No, the property does not contain any residences.

2. Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly?

The property does not contain a place of public assembly.

3. Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped?
The property consists of a two-story office building.

4. Do children visit the property?

Yes, as visitors to the business.

5. Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)?

Access to the property is not restricted.

6. Do pavement, buildings, or other structures cap the contaminated soil?

The former dispenser island is capped by asphalt.

7. What is the zoning status of the property?

The property is zoned as open use and is used for commercial purposes.

8. Is the use of the property likely to change in the next 20 years?

The use of the site property is not likely to change in the next 20 years.

Property Surrounding Source Area of Discharge or Release
The questions below pertain to the area within 1500 feet of the source area of the discharge or release (excludes property containing source area of the release):

9. What is the distance from the source area of the release to the nearest primary or secondary residence (permanent or temporary)?

The distance from the source area to the nearest permanent residence is approximately 100 ft to the single-family residence located east of the subject site.

10. What is the distance from the source area of the release to the nearest school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?

The nearest area of public assembly is Long's Chapel United Methodist Church which is located approximately 425 ft to the east of the site.

11. What is the zoning status of properties in the surrounding area?

The area surrounding the subject site is zoned as open use district.

12. Briefly characterize the use and activities of the land in the surrounding area.

The primary land uses in the immediate vicinity of the site are commercial and residential.

Water Supply Well Information Survey

(This line to be completed by Responsible Party or their representative)
Incident Number: GTF #7217 **Incident Name:** Ray Goodwin Prop.

Please Provide the Following Information (to the bet of your knowledge)

Name and telephone number of person completing the survey:
Name: S. Libbey (in field)
Phone #: (704)-887-4606
Address of property receiving survey: Clyde Reves
66 Lake Shadows Lane
Parcel 8627202176
808-452-4919
City: Lake Junaluska, NC County: Haywood

What is the source of your drinking water? **Public Water / Water Supply Well / Stream Intake / Other (please explain below)** (circled: Water Supply Well)

Is there a water supply well on this property? **Yes / No** (circled: Yes) If "No" disregard remaining questions and return survey

Name and address of owner(s) of property with water supply well; **Name:** See above

How many water supply wells are on your property? 1
What is the well(s) used for? (check all that apply) **Drinking** X, **Irrigation** X, **Swimming Pool** ____, **Water Livestock** ____, **Other (specify)** ____, **You do not use the Well** ____.
How many residences are connected to the well (list addresses below)? 1

How deep is the well(s)? Unknown Date well was installed? Unknown
What is the casing depth of the well(s)? Unknown
What is the screen interval of the well(s)? Unknown

Additional water supply well information:

(This part to be completed by Responsible Party or their representative)
Please return completed survey to Hart & Hickman, PC using one of the following methods:

1. Fax to	(704) 586-0373
2. Mail to	Hart & Hickman, PC Attn: Mr. Stephen Libbey 2923 South Tryon Street, Suite 100 Charlotte, North Carolina 28203
3. Telephone	(704) 586-0007
4. E-mail to	slibbey@harthickman.com

If you have any questions, please contact the consultant indicated above or the Mooresville UST Section Office at (704) 663-1699.

Water Supply Well Information Survey

(This line to be completed by Responsible Party or their representative)
Incident Number: FTF# 7217 **Incident Name:** Roy Goodwin Prop.

Please Provide the Following Information (to the bet of your knowledge)

Name and telephone number of person completing the survey:
Name: S. Libbey (IN FIELD)
Phone #: (704) -887 - 4606
Address of property receiving survey: Patsy Medford 828-456-9779
73 old Clyde Road
Parcel # 8627203752
City: Lake Lure County: Haywood

What is the source of your drinking water? **Public Water / Water Supply Well / Stream Intake / Other (please explain below)**

Is there a water supply well on this property? **Yes / No** If "No" disregard remaining questions and return survey

Name and address of owner(s) of property with water supply well; **Name:** See above

How many water supply wells are on your property?
What is the well(s) used for? (check all that apply) **Drinking** ____, **Irrigation** ____, **Swimming Pool** ____, **Water Livestock** ____, **Other (specify)** ____, **You do not use the Well** X.
How many residences are connected to the well (list addresses below)? 1

How deep is the well(s)? Unknown Date well was installed? Unknown
What is the casing depth of the well(s)? Unknown
What is the screen interval of the well(s)? Unknown

Additional water supply well information: Husband is deceased - he knew well specifics. Patsy does not think well is abandoned.

(This part to be completed by Responsible Party or their representative)
Please return completed survey to Hart & Hickman, PC using one of the following methods:

1. Fax to	(704) 586-0373
2. Mail to	Hart & Hickman, PC Attn: Mr. Stephen Libbey 2923 South Tryon Street, Suite 100 Charlotte, North Carolina 28203
3. Telephone	(704) 586-0007
4. E-mail to	slibbey@harthickman.com

If you have any questions, please contact the consultant indicated above or the Mooresville UST Section Office at (704) 663-1699.

Water Supply Well Information Survey

(This line to be completed by Responsible Party or their representative)
Incident Number: FTF #7217 **Incident Name:** ROY GOODWIN PROP.

Please Provide the Following Information (to the bet of your knowledge)

Name and telephone number of person completing the survey:
Name: S. LIBBEY (IN FIELD)
Phone #: (704) 887 - 4606
Address of property receiving survey:
Parcels 862720 - 0693, 2720, 1465, 3428, 8672, 6562, 7627, 8861, 6959, 1869, 6819, 0410, 1291, 4570, 5772, 3010, 4089
City: Lake Junaluska County: Haywood 1869, 1025

What is the source of your drinking water? **Public Water / Water Supply Well / Stream Intake / Other (please explain below)**

Is there a water supply well on this property? Yes / (No) If "No" disregard remaining questions and return survey

Name and address of owner(s) of property with water supply well; **Name:**

How many water supply wells are on your property?

What is the well(s) used for? (check all that apply) **Drinking ____, Irrigation ____, Swimming Pool ____, Water Livestock ____, Other (specify) _____, You do not use the Well ____.**

How many residences are connected to the well (list addresses below)?

How deep is the well(s)? Date well was installed?

What is the casing depth of the well(s)?

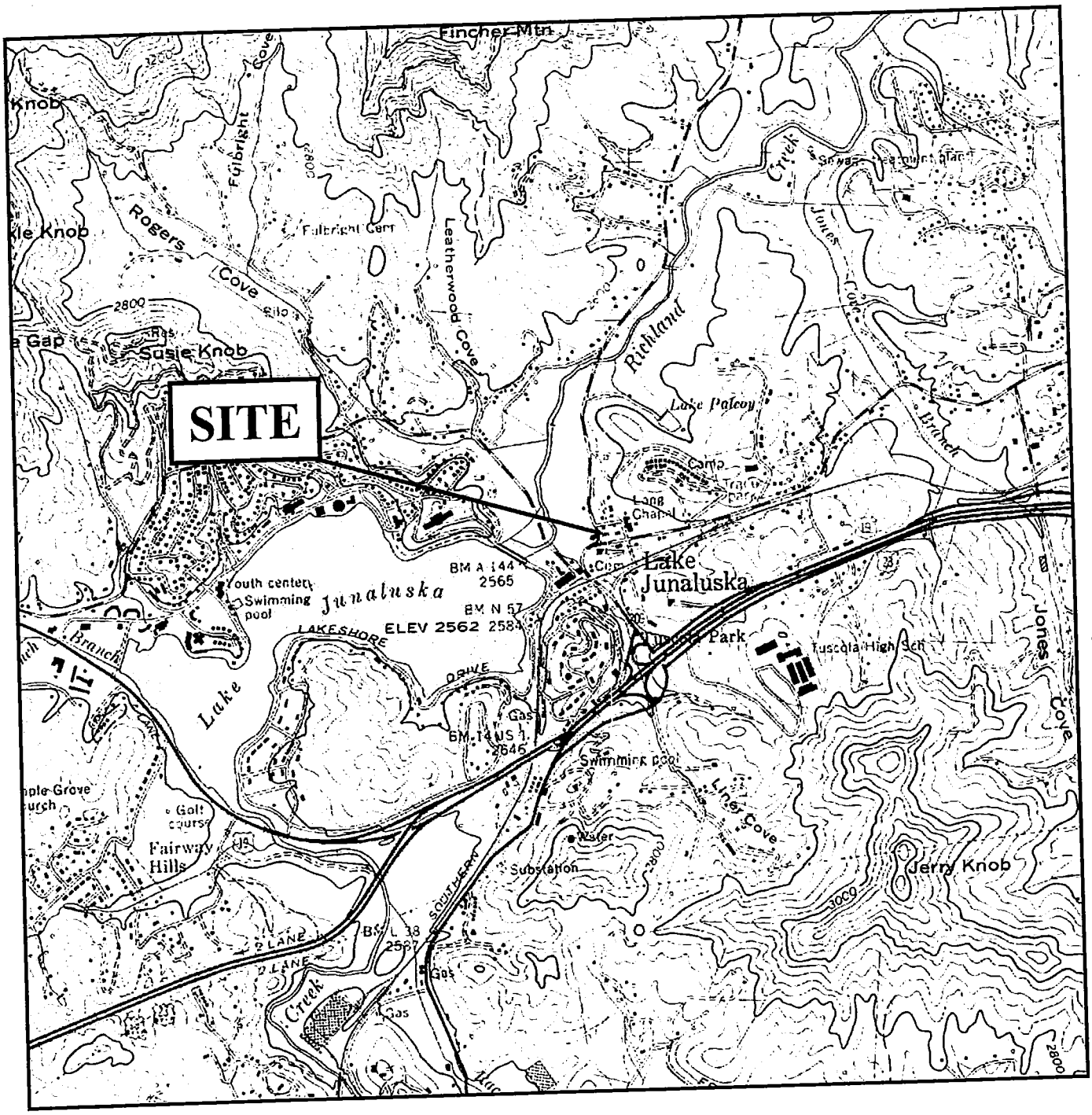
What is the screen interval of the well(s)?

Additional water supply well information:

(This part to be completed by Responsible Party or their representative)
Please return completed survey to Hart & Hickman, PC using one of the following methods:

1. Fax to	(704) 586-0373
2. Mail to	Hart & Hickman, PC Attn: Mr. Stephen Libbey 2923 South Tryon Street, Suite 100 Charlotte, North Carolina 28203
3. Telephone	(704) 586-0007
4. E-mail to	slibbey@harthickman.com

If you have any questions, please contact the consultant indicated above or the Mooresville UST Section Office at (704) 663-1699.



N

APPROXIMATE

0 2000 4000

SCALE IN FEET

U.S.G.S. QUADRANGLE MAP

CLYDE, NC 1967
PHOTOREVISED 1978

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE MAP
PROJECT	ROY GOODWIN PROPERTY LAKE JUNALUSKA, NORTH CAROLINA

Hart & Hickman
A PROFESSIONAL CORPORATION
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007 (p) 704-586-0373 (f)

DATE:	11-30-107	REVISION NO:	1
JOB NO:	UST-058	FIGURE:	1

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE FORMER UST LOCATION
- APPROXIMATE UST EXCAVATION
- MONITORING WELL LOCATION

TITLE

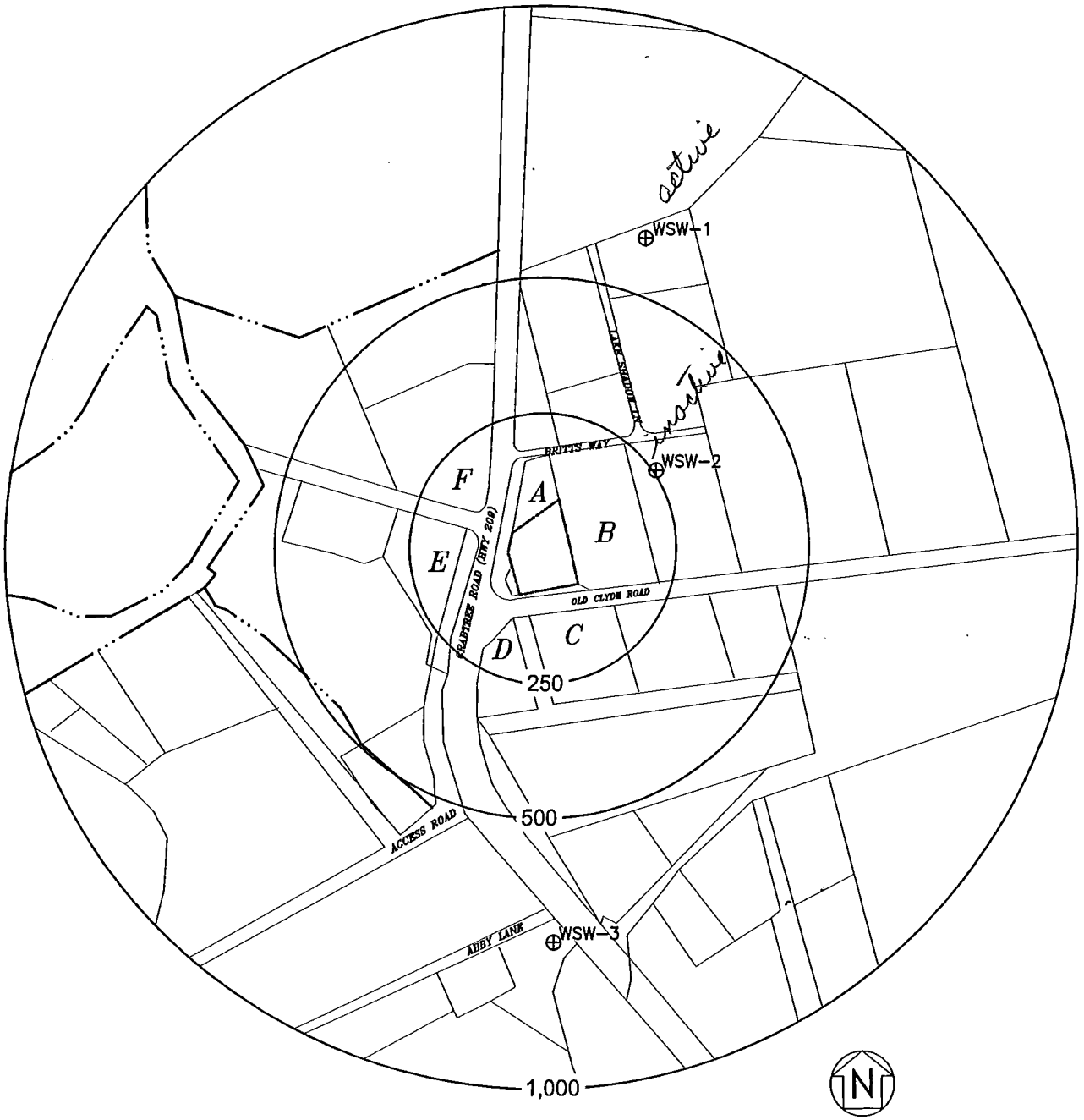
SITE MAP

PROJECT

ROY GOODWIN PROPERTY
LAKE JUNALUSKA, NORTH CAROLINA

Hart & Hickman
A PROFESSIONAL CORPORATION
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

DATE: 12-13-07	REVISION NO. 0
JOB NO: UST-058	FIGURE NO. 2



LEGEND

- SUBJECT SITE
- PROPERTY BOUNDARIES
- SURFACE WATER BODY
- ⊕ APPROXIMATE WATER SUPPLY WELL LOCATION (SEE TABLE 1)
- *A* ADJACENT PROPERTY (SEE TABLE 2)

TITLE: SUPPLY WELL SURVEY MAP	
PROJECT: ROY GOODWIN PROPERTY LAKE JUNALUSKA, NORTH CAROLINA	
Hart & Hickman A Professional Corporation	2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f)
DATE: 12-19-07	REVISION NO. 0
JOB NO: UST-058	FIGURE NO. 3

Hart & Hickman
A Professional Corporation
501 Minuet Lane Suite 101
Charlotte, North Carolina
(704)586-0007 (704)586-0373-fax

LOG OF BORING: MW-1

Sheet 1 of 1

Project: Roy Goodwin Property
Job No: VST-058
Location: Lake Junaluska, NC

Surface Elev.:
Top of Casing Elev.:
Drilling Rig/Method: DPT 6620
Sampling Method: DPT

Elevation, feet	Depth, feet	Sampler Graphics	USCS Symbol	Recovery %	MATERIAL DESCRIPTION (The stratification lines represent approximate boundaries. The transition may be gradual.)	SPT, Blow Counts	BKG. OVA (ppm)	SAMP. OVA (ppm)	WELL DIAGRAM
	0				Red-brown, silty clay, micaceous, dry		0.0	710K	Grout; 10' sch 40 PVC riser →
	5				Yellow-brown, silty clay micaceous, dry		0.0	710K	Bent
	10				Tan-brown, clayey silt, micaceous, some PWR, damp	(8-10) ⊗	0.0	710K	Sand; 10' → sch 40 PVC screen
	15				Brown to orange, clayey silt moist to wet		0.0	6,132	
	20				Boring terminated @ 20'				20' well 10' screen
	25								

Completion Depth: 20
Date Boring Started: 10/02/07
Date Boring Completed: 10/02/07
Engineer/Geologist: MHF
Drilling Contractor: SEI

Remarks: ⊗ sample depth

Revision	DrawnBy	Date	Checked	Approved	File Name

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3393

1. WELL CONTRACTOR:

Ralph Crater
Well Contractor (Individual) Name

Subsurface Enviro. Investigations
Well Contractor Company Name

STREET ADDRESS 2155 Mocksville Hwy

Statesville, NC 28625
City or Town State Zip Code

(704) 876-0010
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable)

STATE WELL PERMIT#(if applicable)

DWQ or OTHER PERMIT #(if applicable)

WELL USE (Check Applicable Box) Monitoring ☐ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)

DATE DRILLED 10-8-07

TIME COMPLETED AM ☐ PM ☒

3. WELL LOCATION:

CITY: Lake Norman COUNTY

11 Clyde Rd
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:
☐ Slope ☐ Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)

LATITUDE 3 __ __
LONGITUDE __ __ __
May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.

FACILITY ID #(if applicable)

NAME OF FACILITY Auto Glass Co (Goodwin)

STREET ADDRESS 11 Clyde Rd

City or Town State Zip Code

CONTACT PERSON Mike Crouch

MAILING ADDRESS 2923 S. Tryon St.
Charlotte NC 28203
City or Town State Zip Code

(704) 586-0007
Area code - Phone number

5. WELL DETAILS:

a. TOTAL DEPTH: 20'

b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☐

c. WATER LEVEL Below Top of Casing: ____ FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): n/a METHOD OF TEST n/a

f. DISINFECTION: Type n/a Amount

g. WATER ZONES (depth):
From n/a To ____ From ____ To ____
From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From 10	To 0	Ft.	2	Sch 40	PVC
From ____	To ____	Ft.	____	____	____
From ____	To ____	Ft.	____	____	____

7. GROUT:

	Depth		Material	Method
From 8	To 5	Ft.	Bentonite	tremie
From 5	To 0	Ft.	Portland	tremie
From ____	To ____	Ft.	____	____

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From 20	To 10	Ft.	2 in.	010 in.	PVC
From ____	To ____	Ft.	____ in.	____ in.	____
From ____	To ____	Ft.	____ in.	____ in.	____

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 20	To 8	Ft.	10/30	Silica sand
From ____	To ____	Ft.	____	____
From ____	To ____	Ft.	____	____

10. DRILLING LOG

From	To	Formation Description

11. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ralph Crater 10-15-07
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Ralph Crater
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1
Rev. 7'05