LAND APPLICATION OF BIOSOLIDS
MAX CHAPMAN, JR.

LO153 (FIELDS 01 – 03)
LOUISA COUNTY, VIRGINIA
JULY 2011

Originally Rec'd
5/15/14

SYNAGRO

July 31, 2011

Mr. Ed Stuart
Dept of Environmental Quality
Northern Virginia Regional Office
13901 Crown Court
Woodbridge, VA 22193

Dear Mr. Stuart:

Transmitted herein for your consideration is land application site for Max Chapman, Jr. (designated as LO 153, fields 1 - 3), located in Louisa County, Virginia. This submission contains strictly site specific information. Please refer to the operations and maintenance manual submitted under separate cover for all non-site specific information.

Do not hesitate to contact me at (804) 443-2170 should you have any questions or require additional information.

Sincerely,

Kelly M Love

Kelly M. Love
Technical Services Director

KML/cmw

Synagro Central, LLC.
10647 Tidewater Trail, Champlain, VA 22438 * Ph: (804) 443-2170 * Fax (804) 443-2214

SYNAGRO

FIELD SUMMARY SHEET

Max Chapman, Jr. LO153

SYNAGRO FIELD #	GROSS ACRES	NET ACRES	FSA TRACT #	FSA FIELD #	TOPO QUAD	OWNER
153-01	70.0	67.4			Pendleton South Anna	Chapman, Max Jr
153-02	27.5	27.0			Pendleton	Chapman, Max Jr
153-03	44.9	44.0			Pendleton South Anna	Chapman, Max Jr
TOTALS:	142.4	138.4				

11 Buck Hill

SYNAGRO

A Residuals Management Company

VIRGINIA REQUEST AND CONSENT FOR BIOSOLIDS

FARM OPERATOR: Max C. Chapman Jr PHONE: 540 967-2327

ADDRESS: PO Box 1284 Louisa VA 23093

FARM LOCATION: 1/2 mi SouR of US 522 / ST Rt 647 below Apple Grove – Mineral, VA.

FSA TRACT #:

TOTAL ACREAGE: COUNTY: Louisa

CROPS: Grass

1. I agree to be responsible for adhering to the following conditions, where applicable:
   a. The soil pH will be adjusted to > 6.0 when biosolids are applied. (This may be accomplished through the application of lime-treated biosolids.)
   b. Do not graze animals on the land for 30 days after the application of biosolids. In addition, animals intended for dairy production should not be allowed to graze on the land or be fed chopped foliage for 60 days after the application of biosolids. Meat-producing livestock should not be fed chopped foliage for 30 days after the application of biosolids.
   c. Food crops for direct human consumption that are above the land surface shall not be harvested for 14 months after the application of biosolids.
   d. Food crops for direct human consumption with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface > 4 months prior to incorporation into the soil, or 38 months when the biosolids remain on the land surface < 4 months prior to incorporation.
   e. Food crops, feed crops and fiber crops shall not be harvested for 30 days after application of biosolids.
   f. Public access to land with a low potential for public exposure shall be restricted for 30 days. Public access to land with a high potential for public exposure shall be restricted for 1 year. No biosolids-amended soil shall be excavated or removed from the site for 30 days following the biosolids application unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols.
   g. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.
   h. Supplemental commercial fertilizer or manure applications should be coordinated with the biosolids applications such that the total crop needs for nutrients are not exceeded as identified on the nutrient balance sheet or the nutrient management plan approved by the Virginia Department of Conservation and Recreation to be supplied to the farm operator by Synagro at the time of application of biosolids to a specific permitted site.
   i. Tobacco, because it has been shown to accumulate cadmium, should not be grown for three years following the application of biosolids-borne cadmium equal to or exceeding 0.45 lbs/acre.
2. I understand that this transaction is not contemplated by the parties to be a sale of goods, and that Synagro is willing to provide to me without charge the service of land applying biosolids which have been approved by the appropriate regulatory agencies for land application.
3. I understand that successful crop production depends on many variables, such as weather, soil conditions and specific farming practices and that while Synagro has experience with land application of biosolids, the responsibility for properly accommodating agricultural practices to biosolids utilization are solely mine. I have also read and understand the "Important Information About Using Biosolids as a Fertilizer" which is on the reverse side and incorporated by reference in this Request and Consent.

OPERATOR'S SIGNATURE

2-2-12
DATE

Synagro • 601 Caroline Street, #601 • Fredericksburg, VA 22401 • 540.371.9050

IMPORTANT INFORMATION ABOUT USING BIOSOLIDS AS A FERTILIZER

Biosolids Generation

Biosolids are the accumulated, treated solids that are separated from water during the wastewater treatment process. Biosolids are produced by public and private wastewater treatment plants (Generators). The Generator is responsible for supplying biosolids that are suitable for land application according to state and federal specifications.

Benefits of Biosolids

Biosolids provide nitrogen in a form that can be taken up by plants during their growth cycle. Biosolids also add phosphorus to the soil. If lime is added to biosolids, the biosolids will have the added benefit of a liming agent. Biosolids contain many primary, secondary and micronutrients that can be used by plants. Biosolids are primarily an organic material; when added to soil, they improve water and nutrient retention, reduce erosion potential and improve soil structure.

The Permitting Process

Once the farm operator requests biosolids, a Synagro representative initially evaluates the farm for truck access and field conditions. If the farm is found to be suitable and the Request for Biosolids and the Consent for Biosolids forms are signed, Synagro will collect soil samples and have them analyzed by an independent laboratory.

Synagro will then apply for any federal, state or local permits required for biosolids application. The permits will specifically identify the fields to which biosolids will be applied and will be issued to Synagro or the Generator.

After the permits are obtained (a process that may take several months or more) Synagro will apply biosolids, as they become available, to the fields. Availability of biosolids may vary because of weather conditions, contractual arrangements with biosolids generators and other factors. Although the company cannot guarantee biosolids application because of factors beyond its control, Synagro will use its best efforts to apply biosolids to the permitted fields.

The conditions outlined in the permit will apply to any and all biosolids applications made by Synagro. Synagro will not be responsible for biosolids applications made by any other entity.

Periodic visits to the land application site(s) by federal, state and local regulatory staff and Synagro representatives may occur for the purpose of permitting the site, inspecting the site, applying biosolids, obtaining samples at the site and testing. Proper identification will be provided upon request.

Agronomic Considerations

Tractor-trailer units are used to deliver biosolids to the fields approved for biosolids applications. Soil compaction may occur on the travel areas used by the trucks and in areas where biosolids is unloaded for transfer to the applicator vehicle.

Since some biosolids contain lime, it is important to recognize any increase in soil pH where biosolids have been applied and exercise care in using certain herbicides. If considering the use of a sulfonylurea herbicide, particular attention should be paid to any label restrictions. High soil pH and dry weather may slow decomposition of these chemicals, resulting in carry-over. For soils with low manganese levels, increased soil pH from lime addition (alone or in lime treated biosolids) may reduce manganese availability and thereby potentially reduce crop yields.

In planning a herbicide program, it should be noted that seeds may sometimes survive the biosolids treatment process-- for example, tomato seeds. Also, the organic matter additions from biosolids application (organic matter tends to tie up certain herbicides) may require increased herbicide application rates. Consult your extension agent or chemical representative for a specific recommendation.

Biosolids contain salts. Biosolids applications alone rarely cause salt problems. However, if combined with other significant salt-increasing factors, such as drought, excessive soil compaction, saline irrigation water and salt-containing fertilizers, salts may reach levels that could negatively affect germination and growth of some crops.

While odor from biosolids applications are not usually significant, and typically less than that from livestock manure, it is possible that an odor from the decomposition of organic matter may be noticed. If this occurs, it generally disappears in a short time.

Since biosolids provide nitrogen that will be released slowly throughout the growing season with diminishing carry-over in subsequent years, it is important to reduce the use of nitrogen and other fertilizers to appropriate levels.

Appendix I

VIRGINIA POLLUTION ABATEMENT APPLICATION
FORM D: MUNICIPAL EFFLUENT AND BIOSOLIDS

PART D-VI: LAND APPLICATION AGREEMENT - BIOSOLIDS AND INDUSTRIAL RESIDUALS

A. This biosolids/industrial residuals land application agreement is made on 2-2-12 between Max C. Chapman Jr. referred to here as "Landowner", and Synagro, referred to here as the "Permittee". This agreement remains in effect until it is terminated in writing by either party or until ownership of all parcels changes. If ownership of individual parcels identified in this agreement changes, those parcels for which ownership has changed will no longer be authorized to receive biosolids or industrial residuals under this agreement.

Landowner:
I am the registered owner of real property known as Chapman Farm, located in Louisa Virginia, which includes the agricultural sites identified below in Table 1 and identified on the tax map(s) attached as Exhibit A.

Table 1.: Parcels authorized to receive biosolids, water treatment residuals or other industrial sludges

Tax Parcel ID	Tax Parcel ID	Tax Parcel ID	Tax Parcel ID
82-19-2	82-19-5		
82-19-3			
82-19-4			

☐ Additional parcels containing Land Application Sites are identified on Supplement A (check if applicable)

Check one: ☒ I am the sole owner of the properties identified herein.
☐ I am one of multiple owners of the properties identified herein.

In the event that I, the landowner, sell or transfer all or part of the property to which biosolids have been applied within 38 months of the latest date of biosolids application, I shall:

1. Notify the purchaser of the applicable public access and crop management restrictions no later than the closing date; and
2. Notify the permit holder of the sale within two weeks following closing.

I have no other agreements for land application on the fields identified herein. I will notify the permittee immediately if conditions change such that the fields are no longer available to the permittee for application or any part of this agreement becomes invalid.

I hereby grant permission to the Permittee to land apply residuals as specified below, on the agricultural sites identified above and in Exhibit A. I also grant permission for DEQ staff to conduct inspections on my land identified above, before, during or after land application of permitted residuals for the purpose of determining compliance.
☒ Class B biosolids ☒ Water treatment residuals ☒ Other industrial sludges (check all that apply)

MAX C. Chapman Jr. — Landowner – Printed Name
Max C Chapman Jr — Signature
PO Box 1284, Louisa VA 23093 — Mailing Address

Permittee:
Synagro, the permittee, agrees to apply biosolids and/or industrial residuals on the landowner's land in the manner authorized by the VPA Permit Regulation and in amounts not to exceed the rates identified in the nutrient management plan prepared for each land application field by a person certified in accordance with §10.1-104.2 of the Code of Virginia. Permittee will provide a copy of the NMP to the landowner within 30 days after land application has commenced. If the plan requires modification to reflect the actual application rates or farming practices at the site, a revised plan will be provided within 2 weeks of the modification.

Permittee agrees to notify landowner or landowner designee of the proposed schedule for land application and specifically prior to any particular application to landowner's land. Notice shall include the source of residuals to be applied.

D. Steve McMahon — Permittee – Authorized Representative Printed Name
D. Steve McMahon — Signature
10647 Tidewater Trail, Champlain, VA 22438 — Mailing Address

VIRGINIA POLLUTION ABATEMENT APPLICATION
PART D-VI LAND APPLICATION AGREEMENT

Permittee: Synagro **Permit # or County:** Louisa

Landowner: MAX C. CHAPMAN JR. ***Farm name or address:*** 10467 Cross Co. Rd Mineral. VA 23117

Landowner Site Management Requirements:

I, the landowner, I have received a DEQ Biosolids Fact Sheet that includes information regarding regulations governing the land application of biosolids, the components of biosolids and proper handling and land application of biosolids.

I have also been expressly advised by the Permittee that the site management requirements and site access restrictions identified below must be complied with after biosolids have been applied on my property in order to protect public health, and that I am responsible for the implementation of these practices.

I agree to implement the following site management practices at each site under my ownership following the land application of biosolids at the site:

1. Notification Signs: I will not remove any signs posted by the Permittee for the purpose of identifying my field as a biosolids land application site, unless requested by the Permittee, at least 30 days after land application at that site was completed.
2. Public Access
    a. Public access to land with a high potential for public exposure shall be restricted for at least one year following any application of biosolids.
    b. Public access to land with a low potential for public exposure shall be restricted for at least 30 days following any application of biosolids. No biosolids amended soil shall be excavated or removed from the site during this same period of time unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols;
    c. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority
3. Crop Restrictions:
    a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
    b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface for a time period of four (4) or more months prior to incorporation into the soil,
    c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months when the biosolids remain on the land surface for a time period of less than four (4) months prior to incorporation.
    d. Other food crops and fiber crops shall not be harvested for 30 days after the application of biosolids;
    e. Feed crops shall not be harvested for 30 days after the application of biosolids (60 days if fed to lactating dairy).
4. Livestock Access Restrictions:
    Following biosolids application to pasture or hayland sites:
    a. Meat producing livestock shall not be grazed for 30 days,
    b. Lactating dairy animals shall not be grazed for a minimum of 60 days.
    c. Other animals shall be restricted from grazing for 30 days;
5. Supplemental commercial fertilizer or manure applications will be coordinated with the biosolids and industrial residuals applications such that the total crop needs for nutrients are not exceeded as identified in the nutrient management plan developed by a person certified in accordance with §10.1-104.2 of the Code of Virginia;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of biosolids or industrial residuals borne cadmium equal to or exceeding 0.45 pounds/acre (0.5 kilograms/hectare).

Max C. Chapman Jr. 2/2/12

Landowner's Signature Date

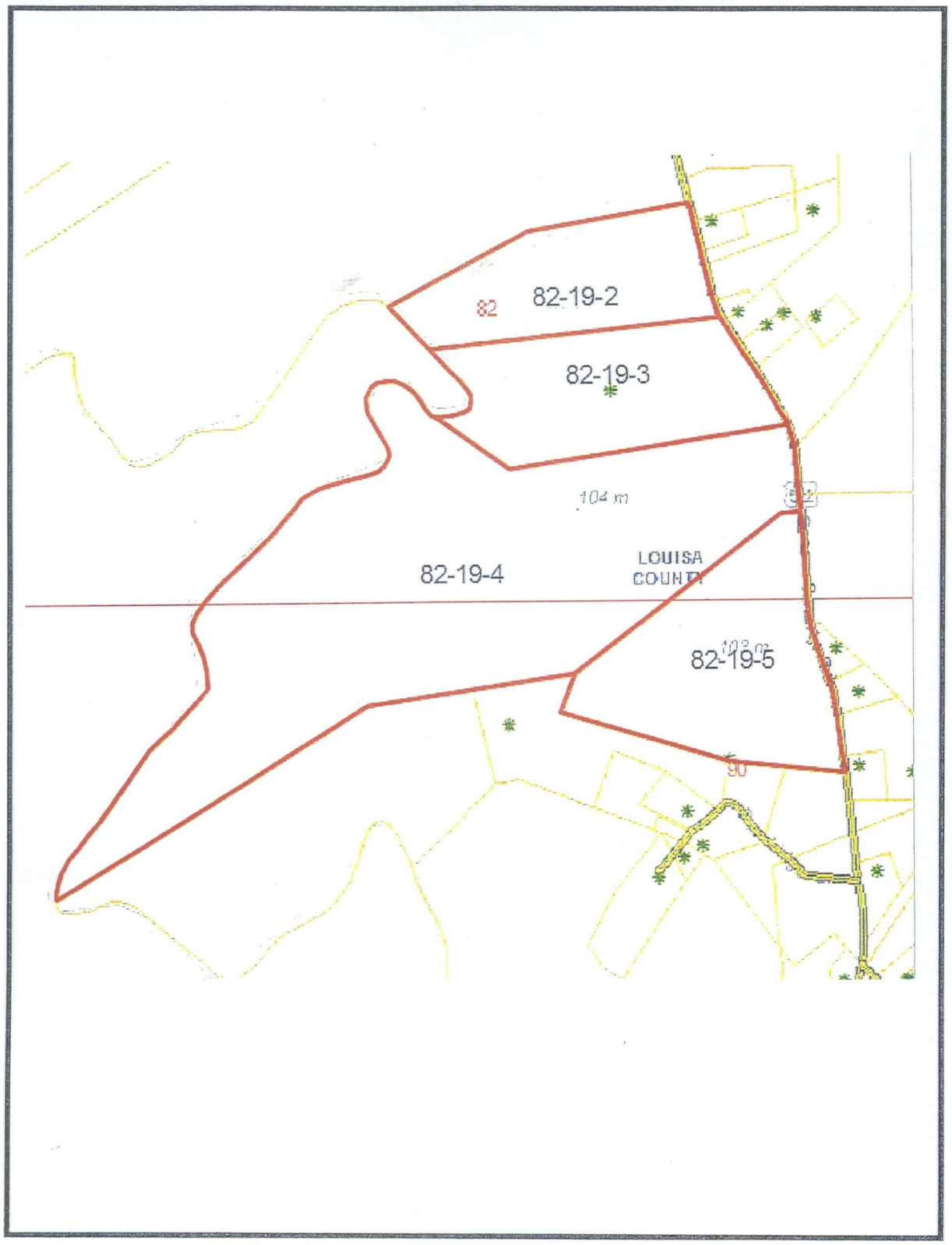
Tax ID Landowner Identification Sheet

Landowner	Field #	Tax ID
CHAPMAN, MAX C JR	153-01	82 - 19 - (3-5)
CHAPMAN, MAX C JR	153-02	82 - 19 - (2-4)
CHAPMAN, MAX C JR	153-03	82 - 19 - 5

Field #	Latitude (north)	Longitude (west)
153-01	37° 52' 34.51"	77° 53' 53.10"
153-02	37° 52' 49.44"	77° 53' 45.74"
153-03	37° 52' 25.54"	77° 53' 41.62"

SYNAGRO

Max Chapman
LO 153
Fields 1-3



TAX MAP

Environmentally Sensitive Areas

Field	Reason for Sensitive Area
153-1	None
153-2	None
153-3	None

Louisa County Soils that are Environmentally Sensitive

Soil Map Unit	Series Name	Time of year		Environmental
		High Water	Flooded	
AsB, AsC, AsD	Ashlar			Leaching
AsC3, AsD3	Ashlar			Leaching
AV	Ashlar			Leaching
Ch	Chewacla	Nov – April	Nov – April	
ClB	Colfax	Nov – June		
Eb	Elbert	Nov – May		
FN	Fluvaquents	Nov – April	Nov – April	
Fo	Forestdale	Jan – April	Jan – April	
FrB	Fork	Oct – May	Oct – May	
IdB	Iredell	Dec – April		
IdB2, IdC2	Iredell	Dec – April		
IrA, IrB	Iredell	Dec – April		
Iv	Iredell	Dec – April		
LgB	Lignum	Dec – May		
MnB, MnC, MnD	Madison			Shallow
MoC, MoD	Madison			Shallow
SeB, SeC, SeD	Sekil			Leaching
SeC3	Sekil			Leaching
SP	Sekil			Leaching
To	Tocca		Jan – Dec	
Ts	Tocca		Jan – Dec	
We	Wehadkee	Nov – May	Nov – June	
WH	Wehadkee-Chewacla	Nov – May	Nov – June	
WoB	Worsham	Nov - May		

MAP LEGEND


House/Dwelling with a well


Rock Outcrop


Well


Lake/Pond


Slope which exceeds 15%


Intermittent Stream


Stream/River

Agricultural/Drainage Ditch

Field boundary

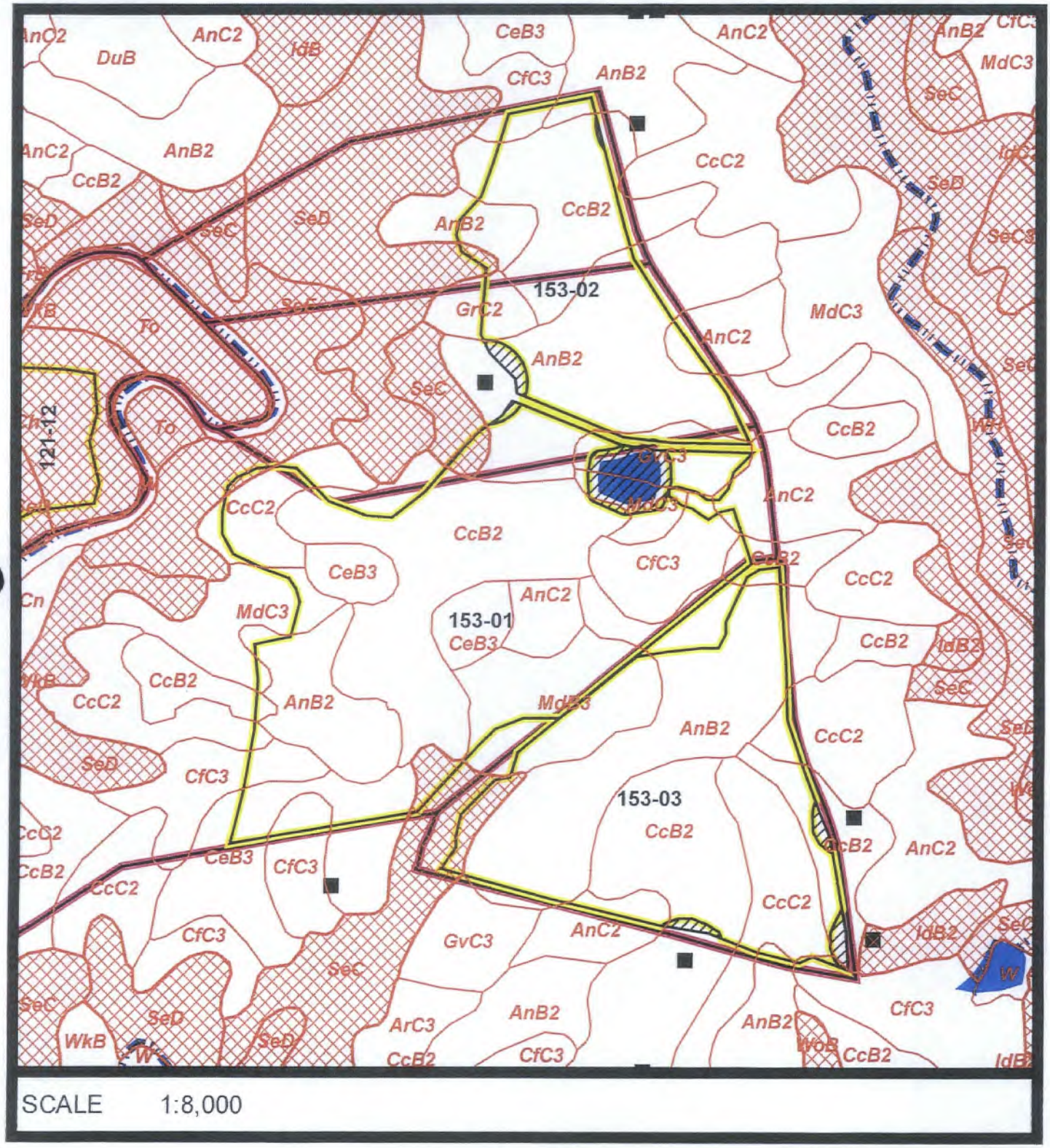
Property Line – (Standard 100' Buffer, unless waiver issued)

Revised: Jan. 13, '14

SYNAGRO

SYNAGRO

Max Chapman, Jr.
LO153
Fields 1 – 3



SCALE 1:8,000

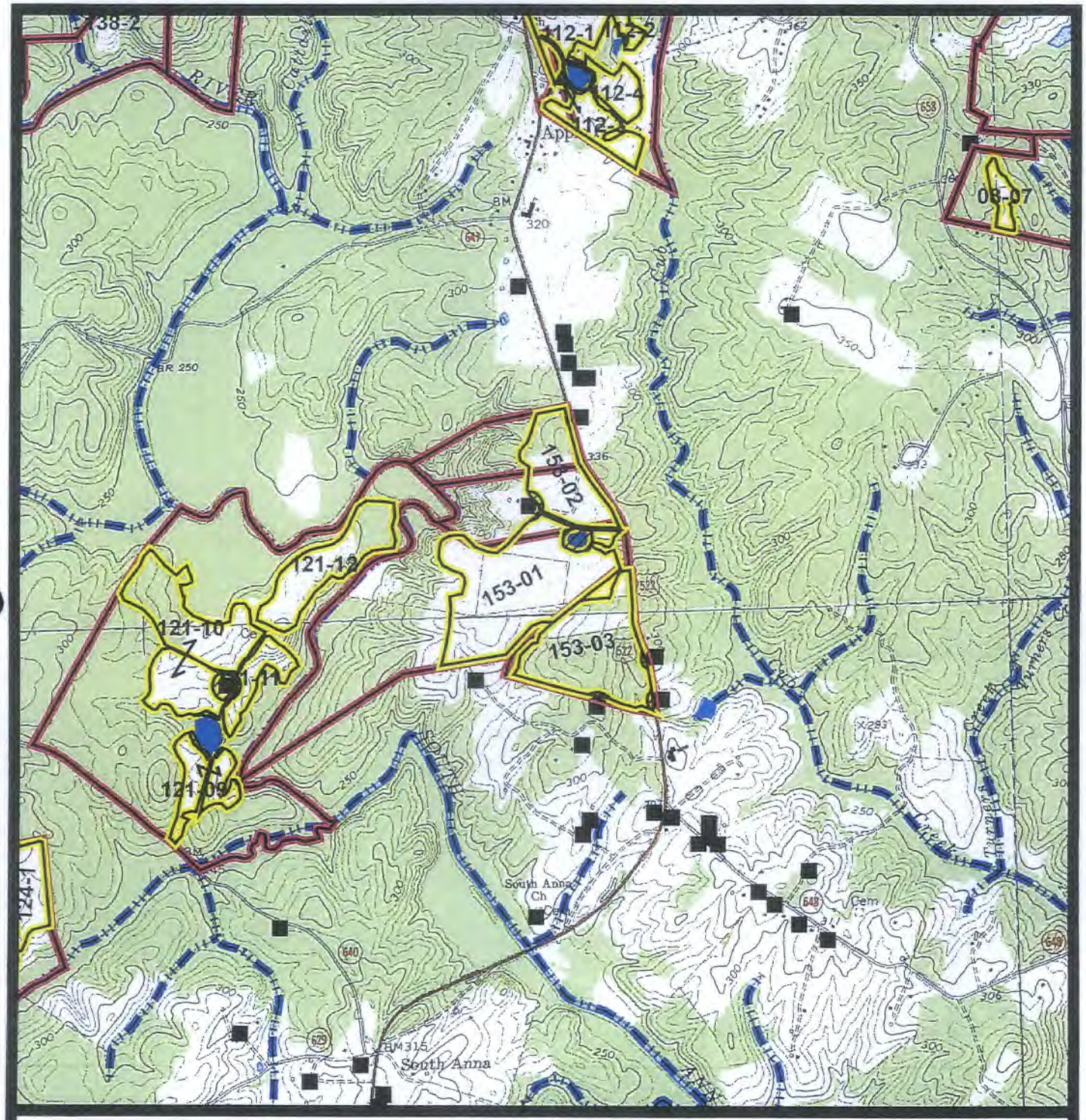
SOIL MAP

Environmentally Sensitive Soil

N

SYNAGRO

Max Chapman, Jr.
LO153
Fields 1 – 3



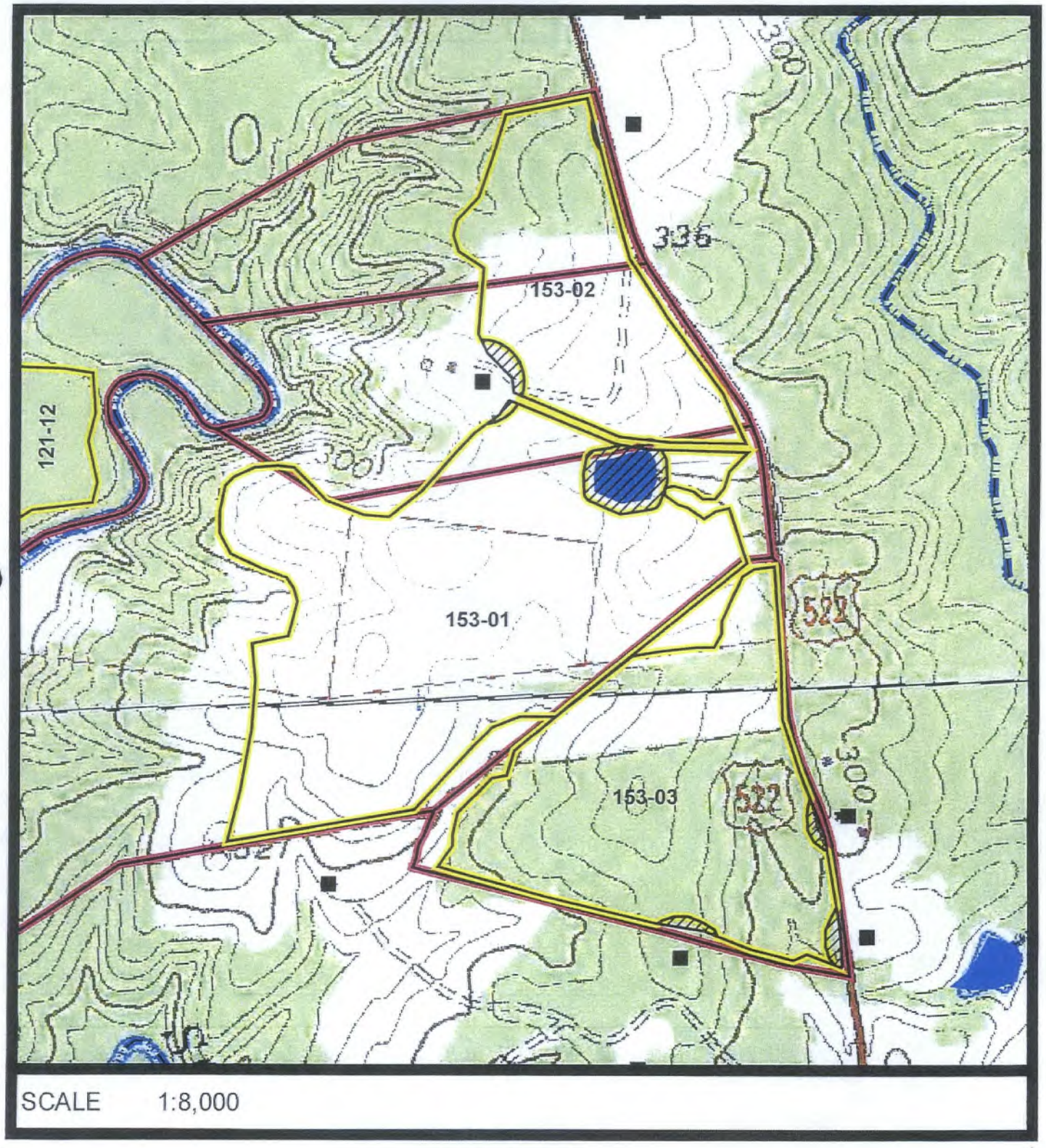
SCALE 1:24,000

TOPO MAP

N

SYNAGRO

Max Chapman, Jr.
LO153
Fields 1 – 3

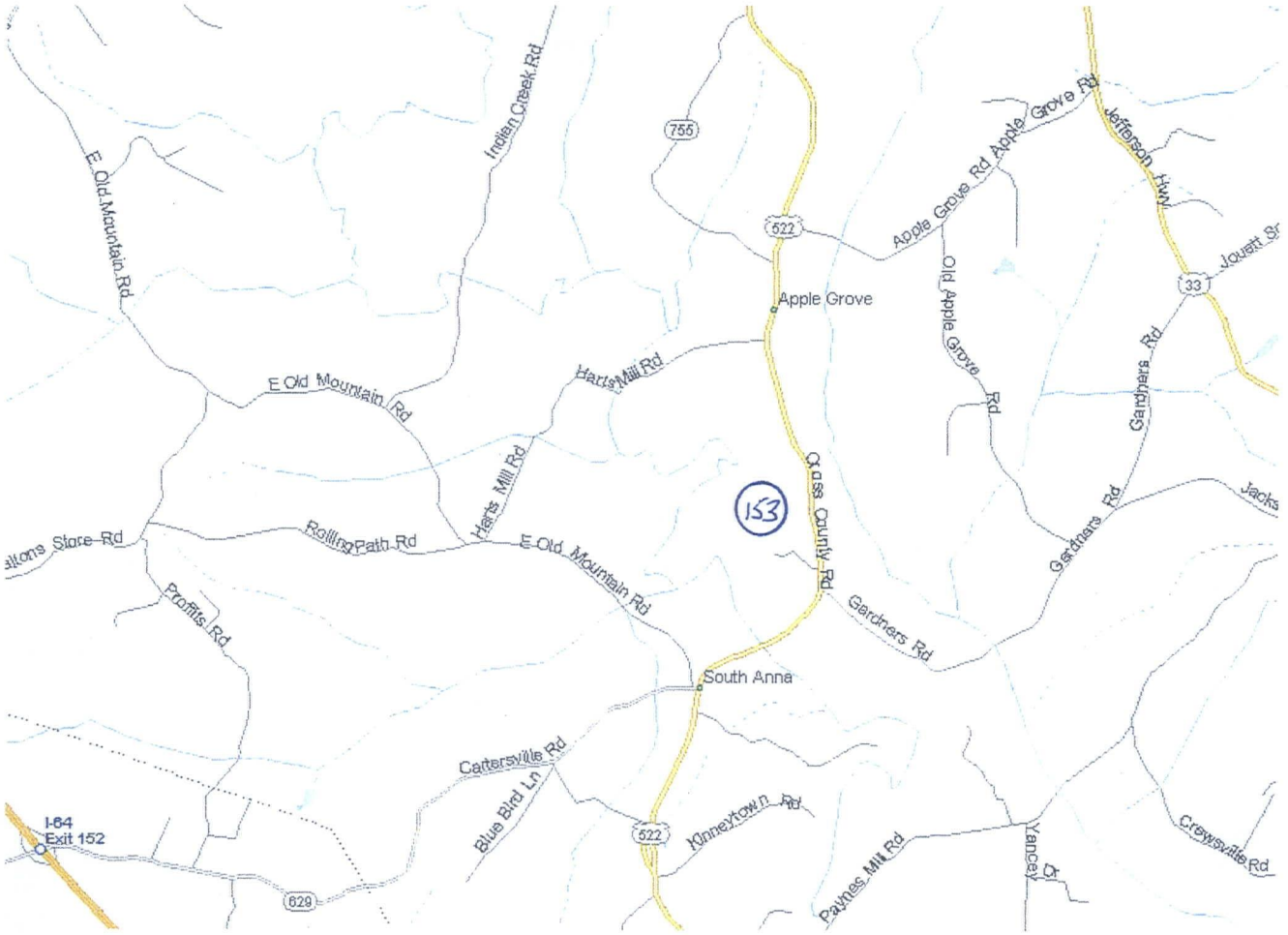


SCALE 1:8,000

TOPO MAP

SYNAGRO

Max Chapman, Jr.
LO153
Fields 1 – 3



LOCATION MAP

N