TRUE NORTH
Environmental

January 19, 2010

Jo Higgins
Project Development, LLC
2564 Mount Torrey Raod
Lyndhurst, Virginia 22952

RE: Restore N'Station Tier III Addendum

Dear MS. Higgins,

In the Tier III Groundwater Assessment and Groundwater Management Plan for Re-Store'N Station (TMP 55B-1) dated October 3, 2008 we estimated the groundwater recharge at 2,115 gallons per day and the well water withdrawal rate at 725 gallons per day.

You have requested a modification to our report considering a new well water withdrawal rate corresponding to the VDH approved septic system design rate of 1600 gallons per day (gpd)- or approximately 1 gallon per minute (gpm). This memo serves as an addendum to our original Tier III Groundwater Assessment.

Please consider the following:

1. Our original estimate of recharge was estimated very conservatively at 2115 gpd. In reality the actual recharge rate will exceed this estimate.
2. Our original estimate also did not include the 725 gpd water usage as a recharge. The vast majority of the well water used on the site will be treated then disposed in the drainfield and ultimately serve as recharge.
3. Design loading rates for drainfields include a safety factor in excess of the projected groundwater usage rate. In Virginia, this factor is typically 1.4 times the actual average water usage rate. We would anticipate the actual average water usage will be close to 1,143 gpd.
4. Even with the withdrawal rate of 1600 gpd, the number is still below estimated average recharge of 2115 gpd.

In our best professional opinion, it is thought that a groundwater withdrawal of 1600 gpd (approximately 1 gpm) or less will not impact the existing wells on adjoining parcels or elsewhere in terms of groundwater supply. Furthermore, this usage does not pose threats of groundwater contamination under normal circumstances.

Limitations
The work performed in conjunction with this project, and the data developed, are intended as a description of available information. Generally accepted industry standards

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were used in the preparation of this report. Stated opinions and conclusions are not intended as a guarantee and the only reliable way to confirm that a sustainable groundwater resource is present is to drill and test a groundwater well for quantity and quality.

True North Environmental appreciates the opportunity to be of service to you with this project. If you have any questions, please call me at your earliest convenience.

Sincerely,

Vincent Day, PG
Geologist/Principal

Michael Craun, PE
Old Dominion Engineering

Re-Store'N Station
Tier 3 Groundwater Assessment
Groundwater Management Plan
TMP 55B-1
Crozet, Virginia

October 3, 2008

Prepared for:
Jeffries II, LLC
P.O. Box 910
Crozet, VA 22932

Submitted by:
Old Dominion Engineering
2036 Forest Drive
Waynesboro, VA 22980

Prepared by:
Nick H. Evans PhD, CPG
Vincent Day

Key Findings

Hydrogeologic unit: Piedmont Foothills

Groundwater availability zone: III—Class 2 (medium relative availability)

Estimated daily groundwater withdrawal: 725 gallons

Estimated daily groundwater recharge to site: 2115 gallons

Site within groundwater sensitivity zone? Yes:

Contamination threats on record: 4 documented leaking underground storage tank (LUST) sites within 1000 feet of the property

Additional contaminant threats observed in field reconnaissance? None

Hydrogeologic conditions favorable to proposed use? Yes

Anticipated impacts of proposed use on existing users: None

Groundwater management plan: Implement runoff-neutral site development as practicable.

Site Overview

The proposed development comprises about 4 acres located on the south side of US 250 approximately 0.70 miles east of Route 64 (Figure 1) and is situated entirely within the Stockton Creek watershed. There are no streams on the property; however, the property drains to the south into a swale that eventually flows into an unnamed tributary of Stockton Creek. There is about 25 feet of relief on the parcel. Land cover on the parcel is open field with mixed grasses and weeds (image, below).

Land use on adjoining parcels is residential and light commercial business. A convenience store is located directly across Route 250, north of the site. The Moose Lodge is located on the adjoining parcel to the west. Adjacent land to the south is occupied by residential dwellings. The adjoining property to the east is occupied by a tree service company.

The applicant proposes to construct a convenience store and gas station. This facility would be served by a transient non-community water supply well, which must be permitted in accordance with Virginia Health Department (VDH), Division of Drinking Water. According to the project engineers, water consumption is estimated to be approximately 725 gallons per day (documentation attached). A site plan showing the proposed development layout and approximate land disturbance is attached to this report. Runoff from the site will be controlled by standard stormwater management practices.

Hydrogeologic Assessment

Bedrock geology

The parcel is situated within a bedrock formation described as biotite-muscovite leucogranite gneiss on the 1993 Geologic Map of Virginia (Figure 2). This falls within the Piedmont Foothills hydrogeologic unit, as defined in the Albemarle County Hydrogeologic Assessment Summary Report of 2003, with Class 2 (medium) relative groundwater availability.

Figure 1: Location map for TMP 55B-1 showing topography, planametric features, surface water features and drainage divides

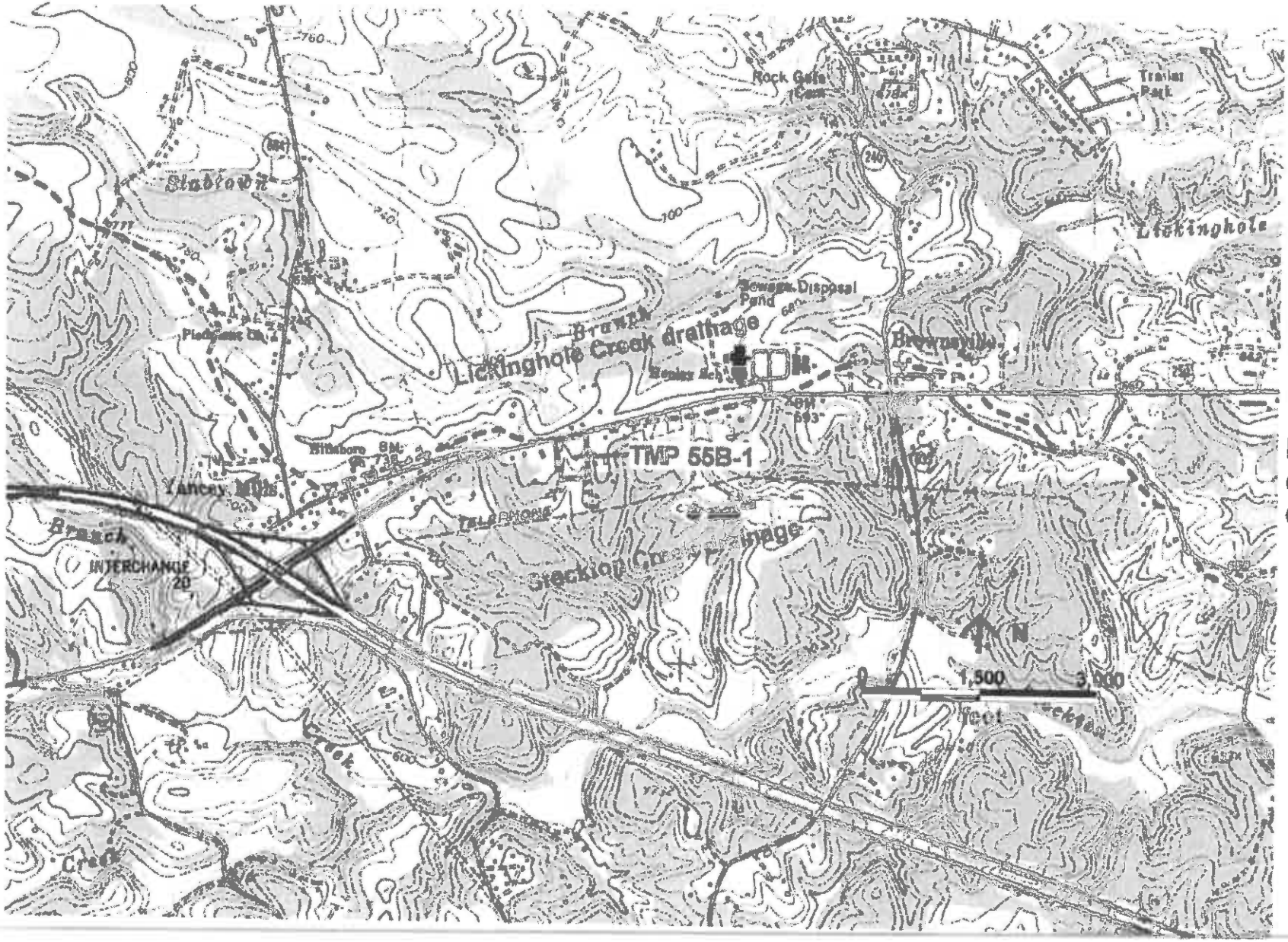
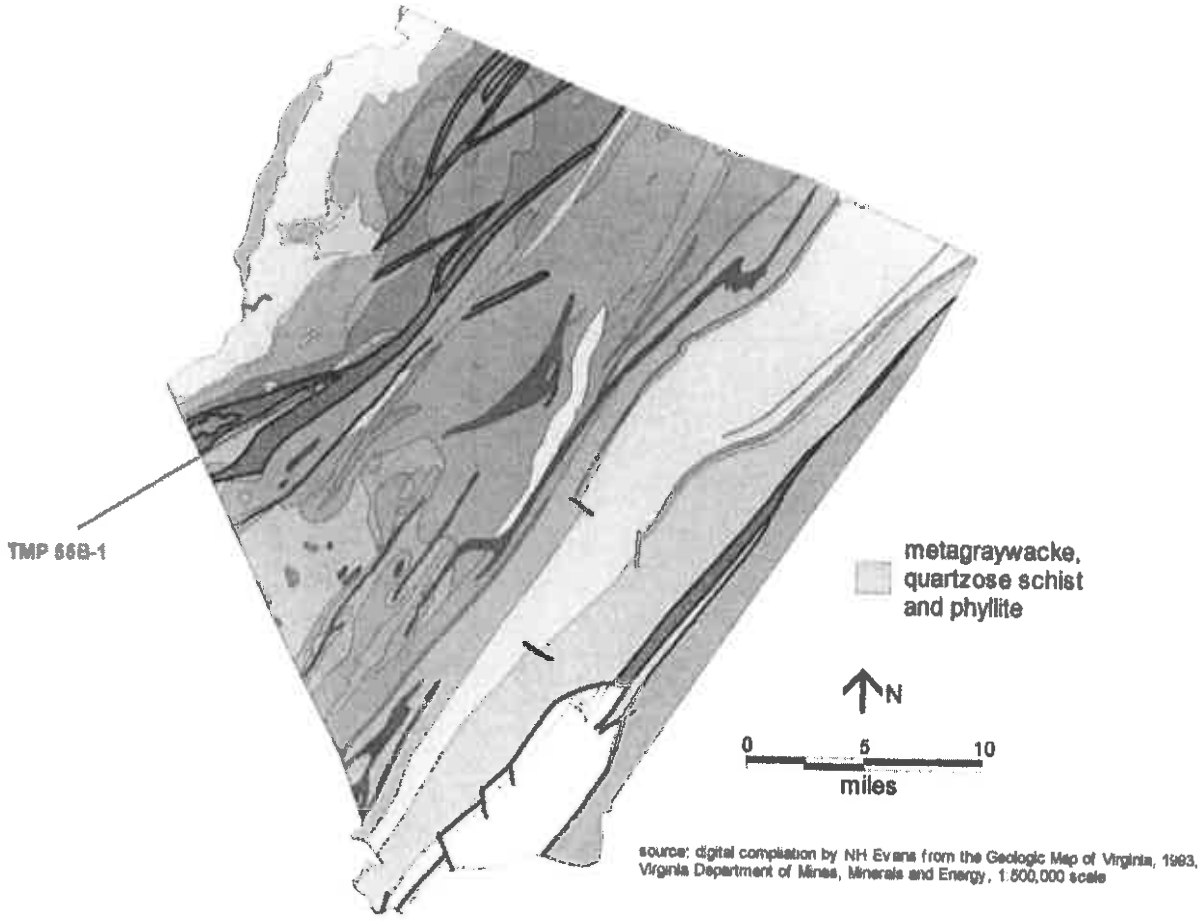


Figure 2: Geologic map of Albemarle County and the City of Charlottesville showing location of TMP 55B-1



Bedrock fracture density and water well productivity

The bedrock underlying this property does not contain primary intergranular porosity through which groundwater might flow. Instead, groundwater flow is confined to bedrock fractures and fissures.

No significant linear features, fracture traces or structural features were identified on air photos or other maps in this study that would be useful indicators of bedrock fracture orientation on this parcel. No bedrock exposures were observed on the property during field reconnaissance. In the absence of good bedrock exposures with which to directly observe bedrock fractures, the yields of randomly-sited water wells can be used as a proxy for fracture density. Table 1 summarizes data from 52 wells in the current county database that were constructed in the same bedrock formation as underlies this property.

Table 1: Domestic water well statistics from Albemarle County database

Geologic map unit	yield (gallons per minute)	total well depth (feet)	casing length (feet)	count
Ygb (biotite-muscovite leucogranite gneiss)	average: 9.6 maximum: 60	average: 186 maximum: 700	average: 42 maximum: 102	52

There are ten wells in the Albemarle County database that are within 2500 feet of the property (Figure 3). Data from those wells are reported in Table 2.

Table 2: Data for wells (Albemarle database) within 2500 feet of proposed development

total depth (feet)	casing length (feet)	yield (gallons per minute)
85	53	6
180	32	12
280	87	10
84	55	6
55		2
80		
230	40	7
225	56	0
55	45	10
80		25

Figure 3: Wells and drainfields within one half mile of TMP 5B-1

▲ existing domestic well (Albemarle County database)

■ existing drainfield (location inferred from aerial photography)

Overall, the data indicate that local biotite-muscovite leucocratic gneiss bedrock is favorable for groundwater development in terms of fracture density. However, the success of a water well drilled at a given location still depends on whether or not the well intersects water-bearing fractures. A dry hole results if no water-bearing fractures are encountered at the chosen drilling site.

Soils and saprolite

According to published soils mapping (USDA Soil Conservation Service, Soil Survey of Albemarle County, 1985), the site is underlain by two variants of the Hayesville Loam (37B & 37C) and the Braddock Loam (7B) (Figure 4).

Hayesville soils are deep, well drained soils weathered from the gneissic parent material. These soils occupy the side slopes of the site. Permeability and available water capacity are moderate. Surface runoff is medium and erosion hazard is moderate. Shrink-swell potential is low.

Braddock soils are deep, well drained and weathered from alluvial fan deposits that capped the residual underlying soils and saprolite. Permeability and available water capacity are moderate. Surface runoff is medium and erosion hazard is moderate. Shrink-swell potential is moderate

The soils on site have the potential to contribute favorably to groundwater recharge where land cover does not inhibit infiltration of rainwater.

Figure 4: Soils mapping in the vicinity of TMP 55B-1

36B: Hayesville loam, 2 - 7% slope

37C3: Hayesville clay loam, 7 - 15% slope

7B: Braddock loam, 2 - 7% slope

source: US Department of Agriculture, Soil Conservation Service, Soil Survey of Albemarle County, Virginia, 1985

Groundwater flow, recharge and discharge

The property is situated immediately south of a drainage divide between Lickinghole Creek drainage to the north, and Stockton Creek to the south (Figure 5). Groundwater flow across the parcel is estimated to be generally in a southerly direction. Ultimately, groundwater at shallow levels discharges into an unnamed tributary of Stockton Creek on adjoining parcels to the south, and into Stockton Creek proper.

Groundwater sensitivity

Contaminant threats

The proposed development does coincide with areas of recognized groundwater sensitivity according to Albemarle County studies and databases that were assembled during the 2003 Albemarle County Hydrogeologic Assessment, Phase II (Figure 6).

There are 4 leaking underground storage tank (LUST) sites within 1000 feet of the property (Table 3). Due to the proximity of these LUST sites, the applicant will need to test the well for presence of volatile organic compounds (VOC) in accordance with Albemarle County ordinance 05-E(1) prior to issuance of a building permit.

Table 3: LUST sites within 1000 feet of TMP 55-81 (source: Virginia DEQ database)

PCNUM	RST_ID	RST_NAME	RST_STATUS	RST_SUSPEC	NAME	LATITUDE	LONGITUDE	FAC_L_ADDR
19801499	1120	Brownsville Market	Closed	Suspected	Albemarle County	38.0496792	-78.71017691	5995 Rockfish Gap Tpke
19995097	2562	Brownsville Market	Closed	Confirmed	Albemarle County	38.04993969	-78.70965397	5995 Rockfish Gap Tpke
19995094	2559	Ridge Mini Market	Open	Confirmed	Albemarle County	38.04970037	-78.71274657	6098 Rockfish Gap Tpke
19975128	2288	Munger Well	Closed	Confirmed	Albemarle County	38.04942562	-78.71722149	6254 Hillsboro Ln

There are approximately 29 existing drainfields, locations inferred from air photos and field reconnaissance, within 2500 feet of the proposed development (Figure 3). Few if any of these are up hydrologic gradient from the property, and none are considered to pose contaminant threats to the property under normal circumstances.

Threats to existing users of groundwater

The proposed development anticipates using a maximum of 725 gallons per day in kitchen and bath facilities (documentation attached). This proposed withdrawal of groundwater is not consumptive, to the extent that virtually all of this water will be returned to the ground as recharge through a drainfield.

Figure 5: Groundwater flow in the vicinty of TMP 55B-1

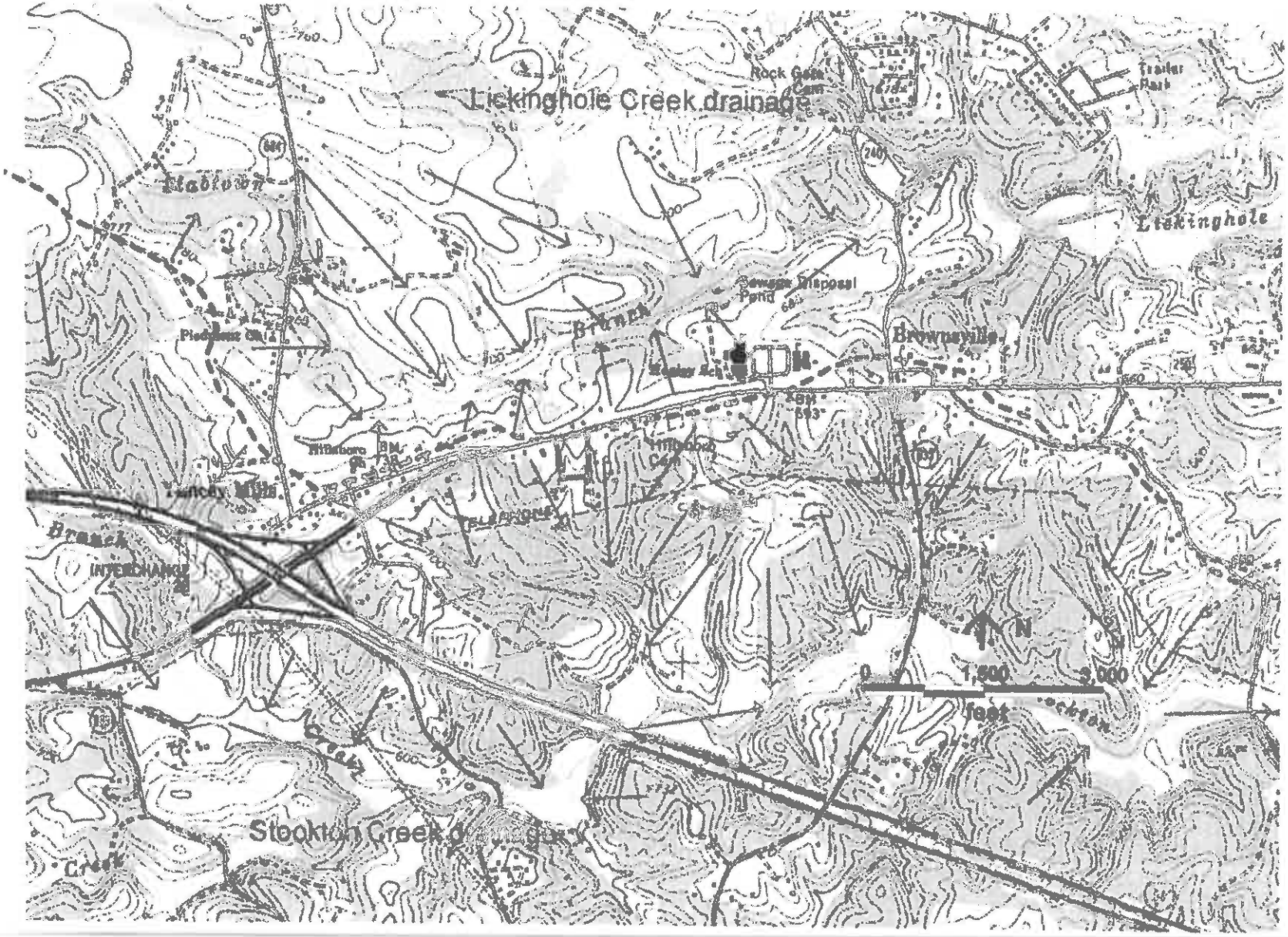
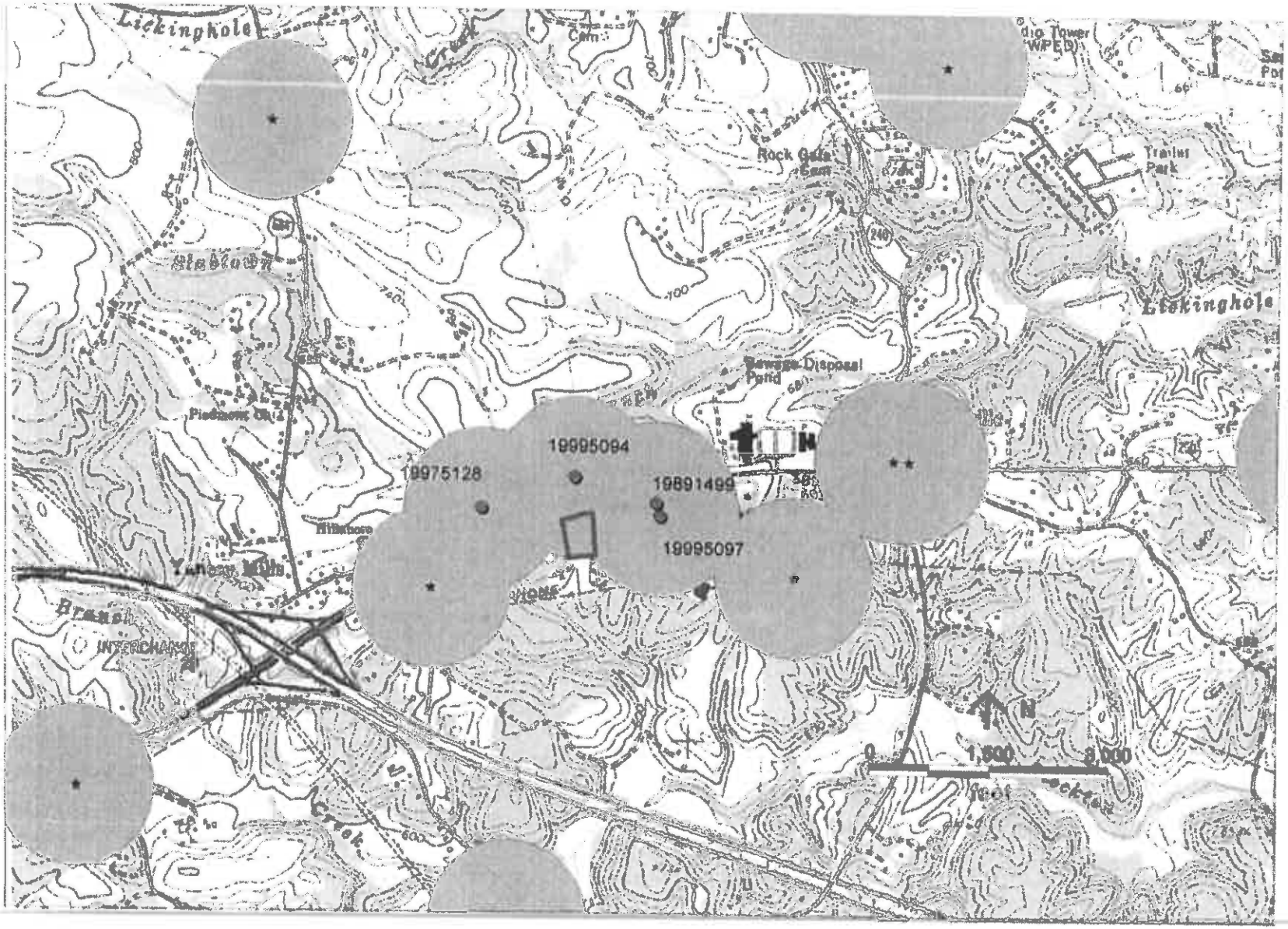


Figure 6: Groundwater sensitivity map showing TMP 55B-1 and known LUST sites (1000 foot buffers shown in orange)

★ documented LUST site ● LUST site within 1000 feet of TMP 5B-1



A conservative estimate of groundwater recharge for the site is on the order of 2115 gallons per day (calculations below). Available recharge is more than adequate to supply the proposed withdrawal of 725 gallons per day.

It is not anticipated that groundwater withdrawal of this magnitude will impact existing wells on adjoining parcels or elsewhere in terms of groundwater supply. The proposed use does not pose threats of groundwater contamination under normal circumstances.

Water budget estimate for site

Annual precipitation: 46 inches

Conservative estimate for percentage of precipitation contributing to groundwater recharge: 15%

Annual groundwater recharge: 6.9 inches

Daily groundwater recharge: .0189 inches = .0016 feet

Daily recharge per acre: .0016 feet X 43560 square feet per acre = 69.7 cubic feet

Gallons recharge per day per acre: 69.76 cubic feet X 7.48 gallons per cubic foot = 521 gallons per day per acre

Gallons per day recharge over entire site: 521 gallons per acre X 4.06 acres= 2115 gallons per day

Predicted groundwater withdrawal on site: 725 gallons per day

Reserve wellfield

If the primary well fails due to contamination or lack of water, it will be necessary to develop another water source. The options for locating a second well will be limited by the size of the parcel and required set-backs from drainfields, parking lots etc.

Dedicated Monitoring well

Due to the small size of the property, this would probably not be an appropriate location for installation of a dedicated monitoring well.

Groundwater management plan

The proposed development will seek to minimize degrading groundwater recharge by implementing runoff-neutral site design and storm water management strategies that minimize offsite runoff.

Submitted by Nicholas H. Evans, CPG # 2801 001041

October 3, 2008 _____

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA
3600 West Broad Street, Richmond, VA 23230
Telephone: 1 (804) 367-8500

EXPIRES ON
08-31-2009

NUMBER
2801 001041

BOARD FOR GEOLOGY

CERTIFIED AS A PROFESSIONAL GEOLOGIST

NICHOLAS H EVANS
4609 BURNLEY STATION ROAD

BARBOURSVILLE, VA 22923

Jay W. DeBoer, Director

ALTERATION OF THIS DOCUMENT, USE OF THE INFORMATION OR USE BY PERSONS OF OTHER THAN THOSE SHOWN MAY RESULT IN CRIMINAL PROSECUTION UNDER THE CODE OF VIRGINIA.

(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)

Old Dominion Engineering

October 3, 2008

Josh Rubinstein, Groundwater Manager
Albemarle County Community Development Office
401 McIntire Road, North Wing
Charlottesville, VA 22902-4596

SUBJECT: **RE-STORE'N STATION ESTIMATED WATER USAGE**

Property Owner: Jeffries II, LLC
Property Address: 6115 Rockfish Gap Tnpk, Crozet, VA
Acreage: 4.06 acres, TM 55B-1
Albemarle County

Property Use

The proposed use for the property is a 6000 square foot convenience store and deli with gas pumps.

Average Daily Water Usage

Water usage data was obtained for five similar facilities. Each of them have a convenience store, deli and gas pumps. Based on this data, the average water usage was 725 gpd. The facility most similar to the Re-Store'N Station in terms of size and location is the Brownsville Market whose average water usage was 648 gpd. However, for the Re-Store'N Station, the more comprehensive average of 725 gpd will be used. This water usage is far less than 2000 gallons per day. A Tier III Groundwater Assessment is adequate for the proposed project and no special use permit will be required.

Shown below is the actual water usage data and the locations of the similar facilities.

GAS STATIONS WITH CONVENIENCE AND FOOD TAKE OUT SERVICE
Water used in gallons / month

Date	Liberty (RT29 & Airport Rd)	Shell (RT29 & Greenbrier)	Shell (RT250 Free Bridge)	BP (Rolkin) RT250	Brownsville Market
Nov-07	20,200	24,100	18,500	20,300	16,000
Oct-07	24,300	22,100	29,500	21,300	17,600
Sep-07	21,300	19,600	23,100	23,600	22,000
Aug-07	23,000	27,600	27,800	23,300	19,400
Jul-07	22,400	23,100	16,500	24,800	19,800
Jun-07	28,900	26,300	13,700	25,300	22,300
May-07	28,000	26,500	14,800	25,400	21,100
Apr-07	23,300	28,300	18,400	19,200	21,400
Mar-07	14,900	23,500	15,800	22,000	20,000
Feb-07	15,800	23,500	23,100	18,300	18,000
Jan-07	17,200	22,900	18,300	24,900	16,000
Dec-06	19,200	30,700	16,300	20,200	
Ave Gal/ Month	21,542	24,683	19,650	23,458	19418

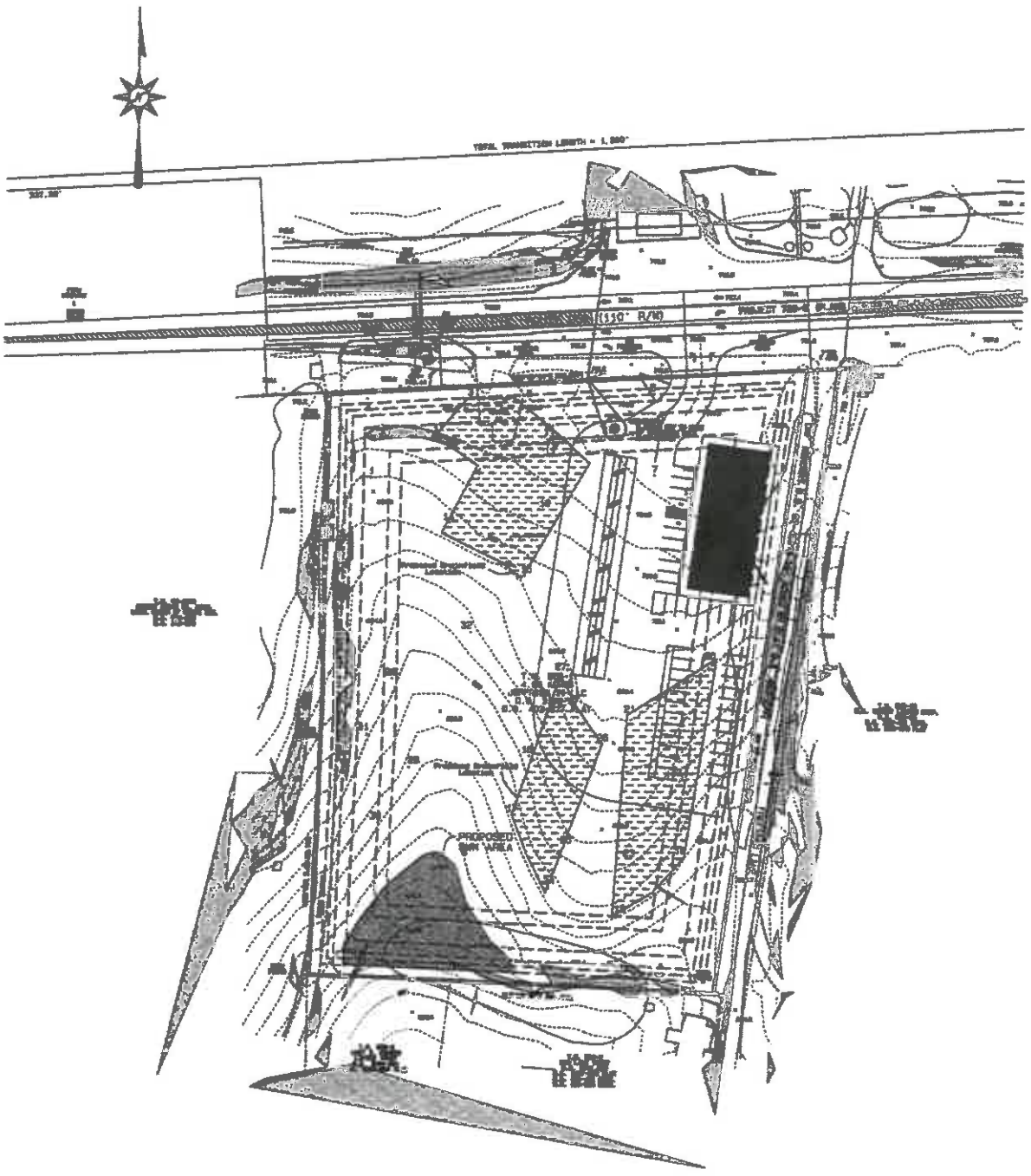
Average water usage of all facilities is 21,750 gallons per month or 725 gallons per day.

The water used at the facility will be for food preparation and sanitary uses. Virtually all water used in this facility will be returned to the site as treated wastewater effluent into the onsite wastewater disposal system and ultimately for groundwater recharge.

Sincerely,

Michael Craun PE

Old Dominion Engineering
2036 Forest Drive • Waynesboro, VA 22980
PHONE (540) 942-5600 • FAX (540) 213-0297



RESTORE 'N STATION
ALBEMARLE COUNTY, VIRGINIA
TAX MAP 55B, PARCEL 1

RE-STORE'N STATION - CONCEPTUAL PLAN

NP ENGINEERING