

## *FDEP Site Priority Scoring Guidance*

### Criteria:

### Requirements:

#### *Fire/Explosion Hazard*

1. Free product or volatilized petroleum products at or above 20% of the Lower Explosive Limit (LEL) in existing utility conduits or vaults, buildings or other inhabited confined spaces (*60 points*).
  
2. Ignitable free product on surface waters or impoundments (*60 points*).

- \* Recommend that a LEL Meter is used to determine if free product or volatilized petroleum products exists at 20% of the LEL. Must be a **documented existing condition**.
- \* Storm sewers, monitoring/compliance wells, remediation system components and tank access vaults do not qualify as an inhabited confined spaces.
  
- \* Must be measurable (0.1 inches) free product. Documentation is required.

#### *Threat to Uncontaminated Drinking Water Supplies.*

1. Uncontaminated municipal or community well fields of greater than 100,000 gallons per day permitted capacity with a well within 1/2 mile of the site (*30 points*).

- \* Well must be a community supply well located within 1/2 mile of the site.
- \* **Permitted capacity** of the Well Field must be greater than 100,000 gpd. (Do not use the Design Capacity of Well Field)
- \* Well located within 1/2 mile of site can not be contaminated (applies to any contamination, not just petroleum).
- \* Multiple wells within 1/2 mile does not mean multiple points, 30 points only regardless of the number of wells.
- \* Well location and capacity must be documented on the Site Inspection (SI) sheet, the drinking water database (PWS114), and/or the HRS sheet. Verification from the City, County or Water Mgmt Dist. (WMD) can also be used.
- \* If location or capacity of the well is ever in question contact the local government for verification.
- \* CAR's, Topo's and Discharge Reporting Forms are not used for Well documentation.

- 1a. If the well field's 1 foot draw down contour is known to encompass the site regardless of the well field's distance from the site (20 points).
- 1b. If the well field is located down gradient of the site (15 points).
2. Uncontaminated private wells constructed **prior** to date of contamination discovery, or uncontaminated public water system well field with less than 100,000 gallons per day permitted capacity with a well within 1/4 mile of the site (20 points).
- 2a. If the well field's 1 foot draw down contour is known to encompass the site regardless of the well field's distance from the site (10 points).
- 2b. If the well field is located down gradient of the site (5 points).
3. Uncontaminated surface water body used as a public water system supply within 1/2 mile of the site (10 points).
- \* If a large community well is located within 1/2 mile, use the Theis equation in Excel to determine drawdown radius of the wellfield.
  - \* If there aren't any wells within 1/2 mile, search a 2 mile radius for any large community wells (search in 1/4 mile increments). Note that some sources, list design capacities rather than permitted capacities. To obtain the wellfield's permitted capacity, contact the local government or WMD.
  - \* If there is a well within 1/2 mile but it isn't large enough to get points for drawdown then do a 2 mile search as explained above.
  - \* The Theis Equation is explained below.
  - \* Multiple points are not given for multiple wellfields
  - \* Well field **must be within 1/2 mile** of the site.
  - \* Downgradient direction needs to be documented. Look up the direction in a technical report or on a Topo.
  - \* Private wells must be located within 1/4 mile of site.
  - \* Wells must have been constructed **prior** to date of contamination. If construction date is in question, verify with WMD or local government.
  - \* The well must be an **uncontaminated potable well**.
  - \* Well location must be verified by SI sheet, HRS, PWS114, and/or local governments.
  - \* Irrigation wells **do not** receive points.
  - \* Small wells typically do not have a large enough capacity to receive drawdown points. If the private well is **on site and not contaminated**, then a 1 foot draw down is assumed and the site receives the 10 points.
  - \* Direction of groundwater flow must be documented.
  - \* Well must be within 1/4 mile
  - \* This information can be found on the HRS sheet, the SI sheet or additional information provided by a local government.

**Migration Potential:****1. Source Characteristics (*select only one*)**

- a. Recent spills or free product found in wells/boreholes (*4 points*) **except** free product of 2 inches or more in 2 or more wells/boreholes (*6 points*).  
 \* Recent Spill means a discharge of petroleum products within 365 days prior to the date of the site scoring.  
 \* This information can be found on the SI sheets in the site file or obtained from the local agency.  
 \* If no information is provided then the site receives 2 points for this category.
- b. Recent product loss or wells/groundwater contaminated but no free product (*2 points*).

**2. Product Type (*select only one*):**

- 2a. Light petroleum product (kerosene, gasoline, aviation fuel and similar petroleum products) with water soluble additives or enhancers (MTBE, ethanol and similar substances) (*3 points*).  
 \* Product type can be found on the SI sheet. Laboratory data must be provided to verify additives or enhancers.
- 2b. Light petroleum product with no additives or enhancers (*2 points*).  
 \* If lab data does not verify additives, then the site receives 2 points.  
 \* If lab data is not provided but discharge was gasoline, then the site receives 2 points.
- 2c. Heavy petroleum product (fuel oil, diesel and similar petroleum products) (*1 point*).  
 \* Site receives 1 point if discharge was heavy petroleum product.  
 \* 1 point is given if product type is not known.

**Environmental Setting:**

1. Site located in G-1 aquifer (*4 points*).  
 \* Only Northeast Flagler County receives G-1 aquifer points.
2. Site located in a G-2 aquifer (*2 points*).  
 \* All sites except Northeast Flagler County and the Keys receive 2 points.  
 \* Sites located in the Keys do not receive aquifer points.
3. Site located in a high recharge/permeability geological area (*4 points*).  
 \* Use Water Resource Investigation Report 84-4210 to determine if site is eligible for high recharge points. Find site location on the map, if site is located in a dark blue or white area then 4 points is given.
4. Site located within 1/2 mile of an Outstanding Florida Water (*1 point*)  
 \* Outstanding Florida Water, includes protected water bodies and park areas. A booklet listing all Outstanding Florida Water Bodies is available from the DEP's Standards and Monitoring Section.

## *Additional Scoring Information*

- \* Wells beyond 2 miles are not included in site scoring.
  - \* If all requirements are met, then a site can receive 30 points for having a large community supply well within 1/2 mile, 20 points for drawdown & 10 points for down gradient. The “or” on the score sheet does not mean that the site can only receive points for either drawdown or down gradient.
  - \* If there aren’t any large wells within 1/2 mile, then the site would receive zero points for 1 & 1b. Still do a 2 mile search to locate any additional wells that might receive the 20 points for drawdown.
  - \* If no large well exists within 2 miles of the site, but 10 or greater private potable wells exist within 1/4 mile, then the site receives 30 points for small wells instead of 20. The private wells must not be contaminated and must have been installed prior to date of contamination. If any of the wells are down gradient of the site then the additional 5 points are awarded.
  - \* If no small wells exist within 1/4 mile of the site then 2, 2a & 2b are all zero points.
  - \* If verification of a well’s existence, location, capacity, and/or permitted use is needed, check with any of the following:
    - County Government
    - City Government
    - HRS County Office
    - Water Management District
- Request documentation verifying well information.
- \* Irrigation or Industrial wells are not considered for scoring purposes.
  - \* Multiple wells or wellfields does not mean multiple points.
  - \* When rescoring a site, if points awarded during a previous scoring event can not be verified then the points are taken away.
  - \* The current score sheet does not award points for work completed by site owner. Any points previously given for this category will be taken away when rescoring the site.

## *Theis Equation*

T = Transmissivity (feet squared per day)

s = storativity (no units)

Q = Permitted Capacity (gallons per day) not Design Capacity

R = radius around the well (feet)

For Scoring purposes a 1 foot drawdown and 30 days is assumed.

The “T” and “s” values for several counties can be found on the “Setup” sheet (Attachment 4). Locate the correct county and write the “T” & “s” values on the score sheet. When more than one city is listed, use the “T” & “s” value for the city nearest the site. If the county is not on the Setup sheet then go to Professional Paper 1403-B to determine the Transmissivity, and Water Resource Investigation Report 84-4210 to determine storativity. The Transmissivity on PP 1403-B is given in ranges, write the range on the score sheet, and calculate Theis using both ends of the range.

Locate the site on WRIR 84-4210, aka “the blue map”, the same map that is used to determine high recharge. If the site is located in a dark blue area then  $s = 0.2$ ; if the site is located in a light blue or white area then  $s = 0.0001$ .

“T” & “s” values from a local government agency can be used instead of using the Setup sheet or PP 1403-B/WRIR 84-4210, but it must be noted on the score sheet and documentation provided.

Enter the “T”, “s” & “Q” value in the Modified Theis Equation (the first equation on the spreadsheet). After entering this information the “U” value is calculated, record the value of “U” on the score sheet. If “U” is less than 0.01 write down the determined “R” value on the score sheet. Check to see if the “R” value extends out far enough from the well to encompass the site. If it does then the site receives 20 points for large well drawdown.

If “U” is greater than 0.01 then scroll down to the Theis Equation, either the 3rd or 4th equation given can be used, the only difference is the 3rd assumes 1 foot & 30 days, the 4th allows these values to be adjusted. Using the calculated value of  $W(u)$ , look up the “U” value and enter this number next to the cell labeled “U from table”. Record the calculated value of “R” on the score sheet and determine if the site is within the well field’s 1 foot drawdown contour. For example, if the well is 1/2 mile (2640 ft) from the site then the R value would have to be at least 2640 ft for the site to receive the 20 points. If the “R” value is any less than 2640 ft then this site would not receive the 20 points for drawdown.

WRIR 84-4210 and PP 1403-B are both available from the USGS.

“U” values can be found in Table 5 - Values of  $W(u)$  for values of  $u$  between  $10^{-15}$  and 9.9 from Ferris, Knowles, Brown & Stallman, 1962 pg. 90.