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GOVERNOR

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

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**INJECTION AND MINING DIVISION
INTRA-OFFICE POLICY STATEMENT**

POLICY NO.: IMD-GS-10

EFFECTIVE DATE: November 1, 2010

SUBJECT: Injection and Mining Location Plat Requirements

BACKGROUND:

Over the years, the Injection and Mining Division (IMD) has referred to the Office of Conservation's regulations under LAC 43:XIX, Chapter 1, General Provisions and to the Professional Engineers and Land Surveyors' regulations under LAC 46:LXI, Chapters 27 and 29 for guidance in administering the location plat requirements for proposed or existing wells.

The above-referenced regulations were written for the generation of property boundaries that define a given property area, but do not specifically address a survey for a single point location (such as a proposed or existing well) that is not associated with a boundary survey. Most of the Injection and Mining Division applications that require location plats are for a single well location. IMD seeks to establish a policy for surveys and location plats associated with IMD applications or permits that will employ the existing regulations where applicable and expand the requirements to meet our current needs.

IMD currently employs an area of review process that identifies deficient wells within a defined area around a proposed well location. IMD seeks to improve the accuracy of proposed and existing well locations, which will increase the effectiveness of the review process and allow us to address any potential environmental impacts prior to issuing a permit. Additionally, IMD seeks to improve the reliability of location descriptions and coordinates for permitted wells that require field inspection, testing, or enforcement action.

POLICY:

1. **INJECTION AND MINING PERMIT REQUIREMENTS**

Injection and Mining Division applications that require a location plat must meet the requirements of this policy. For those IMD applications that require a location plat to be submitted, the application instructions will specify whether a NEW or EXISTING survey and location plat must/can be submitted. The Area of Review (AOR) information may be

included on the location plat, as long as the well location is surveyed and certified according to the requirements of this policy.

A. ***For IMD applications that require a NEW survey and location plat:***

The proposed or existing well must be surveyed (resurveyed) and an original, certified location plat of the well location must be submitted with the application. If the application requires that a property boundary be defined, then the property boundary survey must comply with the requirements of LAC 46:LXI.2907 and 2909, and the location plat must comply with the requirements of this policy.

All new wells must be drilled at the surveyed location depicted and described on the location plat. Once the well is drilled, a Conservation Enforcement Specialist (CES) Inspector will collect geographic coordinates from the well location to verify that the applicant drilled the well where the surveyor staked the proposed location. If the geographic coordinates are not consistent with the surveyed location reported on the plat, then IMD will require the applicant to address the discrepancy before issuing a Permit-to-Inject. Failure to adequately address the discrepancy may result in the applicant having to resurvey the well.

B. ***For IMD applications that will accept an EXISTING survey and location plat:***

1. If the existing well or proposed well location was surveyed before the effective date of this policy, then IMD will accept a photocopied, certified location plat of the existing well, as long as the plat has been previously accepted by the Office of Conservation and the correct State Plane- X,Y (Lambert, NAD 1927) coordinates are available in the DNR database (SONRIS). The applicant must insure that the coordinates referenced in SONRIS or on the existing location plat are consistent with the location of the well on the ground. Once the application is approved and the work on the well is completed, a CES Inspector will collect geographic coordinates from the well location to verify the geographic information on record. If the geographic coordinates are not consistent with the coordinates referenced in SONRIS or reported on the existing location plat, then IMD will require the applicant to address the discrepancy before allowing the well be used for injection. Failure to adequately address the discrepancy may result in the applicant having to resurvey the well.
2. If the existing well was surveyed after the effective date of this policy, then IMD will accept a photocopied, certified location plat of the well, as long as the plat has been previously accepted by this Office and meets the survey and location plat requirements of this policy. If the survey and location plat do not meet the requirements of this policy, then the well must be resurveyed and an original, certified location plat of the well location must be submitted with the application.

C. ***For any IMD PERMITTED well:***

An original, certified drilling location plat of the existing well may be required at the request of the Injection and Mining Division.

2. **SURVEY**

A. ***Field Investigation***

If an application requires the applicant to survey a proposed or existing well, then a field investigation must be conducted to identify the location of the well. The field investigation

must be performed by or under the direction of a Professional Land Surveyor. The location of the well must be set with a sturdy marker that can withstand damage from natural forces, earthworks, construction, or traffic. The marker must be at least ½ inch in width/diameter, at least 18 inches in length, and easily distinguishable from the adjacent surroundings.

B. *Location Determination*

Once the proposed well location is set or the existing well location is identified, the location must be surveyed on the ground with measurements that are accurate to the nearest foot. The following reference points may be used to determine the location of the well:

1. Section Lines. The field-measured distances from the nearer north/south and nearer east/west section lines must be measured at ninety (90) degrees from said section lines to the well location.
2. Historical or Government Surveyed Monuments. For well locations that can not be surveyed using an established section corner, then the surveyor may use the distance and bearing to the nearest historical monument or government surveyed monument.
3. Protracted Section Plat. For unsurveyed land grants and other areas where an official state or federal government survey system does not exist, the well locations must be indicated as footages on a protracted section plat. If the location is determined using this method, then the location plat must contain the state plane coordinates of the endpoints of the projected section lines and must reference the source of the protracted section line information.

C. *Global Positioning System (GPS)*

GPS may be used in conjunction with the other requirements of this policy provided their use meets the following minimum standards:

1. Instruments must be capable of accuracy to the nearest foot after correction.
2. All GPS data must be corrected by post processing prior to data submission.
3. Position dilution of precision (PDOP) values must not be higher than six (6) and must be included with location data.
4. Elevation mask (lowest acceptable height above the horizon) must be no less than fifteen degrees (15°).
5. Bearings must be provided in Degrees, Minutes, Seconds (DMS) with accuracy and precision to the nearest second using the NAD of 1927 or 1983, whichever is appropriate.
6. Latitude and longitude coordinates must be provided in DMS with an accuracy and precision of two (2) decimals of a second using the North American Datum of 1927 and 1983.
7. Raw and corrected data files must be held for a period of three (3) years.
8. Datum conversions must be performed using a government issued conversion program.

3. **LOCATION PLAT**

A. ***Format***

A location plat depicting the field survey of the well on the ground must be submitted with dimensions of 8 inch by 10 ½ inch and drawn to a scale of 1,000 feet to the inch. ***A smaller scale may be used as long as the applicable features required by Section 3.D of this policy are represented.***[†] Location plats with dimensions greater than 8 inch by 10 ½ inch may be submitted if the proposed project dictates such a depiction. The location plat must include the following items:

1. A map legend
2. A north arrow
3. A scale expressed as an equivalent (e.g. 1 inch = 1,000 feet)
4. A bar scale
5. The ground elevation
6. The basis of the elevation (how it was calculated or its source)
7. The basis of bearing or interior angles used
8. Complete description of monuments and/or collateral evidence found; all aliquot corners used must be described
9. The legal land description by section, township, range, principal meridian, baseline and parish
10. Operator name
11. Well name and well number
12. Date of the field survey
13. Date of completion of scaled drawing
14. All location depictions and descriptions required by this policy.
15. All geographic coordinates required by this policy.
16. All features required by this policy.
17. All certifications required by this policy.

B. ***Legal Description***

The location plat must contain a written legal description of the surveyed well location, which provides sufficient information to locate the well on the ground. The description must include the field-measured distances to the referenced section lines, or the distance and bearing to a historical monument or state/federal government surveyed monument, or the footages on a protracted section plat. If the plat contains a surveyed description or depiction that was not generated by the most recent survey, then the description must be followed by a statement that connects the description to the specific survey on which it is based and to the map or plat that depicts the survey. Such a statement may be phrased: “This description is based on the survey and plat made by [insert licensee’s name], Professional Land Surveyor, dated [insert date].”

C. *Geographic Coordinates*

The latitude and longitude of the proposed well location must be provided on the plat in DMS with a minimum accuracy and precision of two (2) decimals of a second using the North American Datum (NAD) of 1927 and 1983. Also, the Louisiana State Plane- X,Y coordinates must be provided on the plat using the NAD of 1927 and 1983 and the Lambert Zone from which the coordinates were projected. If Global Positioning System (GPS) technology is utilized to determine the geographic coordinates, then all GPS data must meet the requirements provided in this policy. The Injection and Mining Division will NOT accept any geographic coordinates that were scaled from a map.

D. *Features*

The following features must be depicted if they occur within the dimensions of the plat, but are not required to be surveyed in the field and subsequently certified - unless the location of a feature is disputed and has a direct bearing on the permit application:

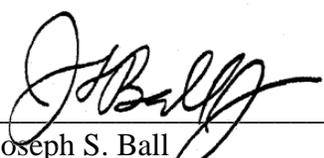
1. Section lines
2. Pertinent lease and property lines
3. Leases
4. Oil and Gas Wells (differentiated by status)
5. Injection Wells (differentiated by class type and status)
6. Water Wells (differentiated by status)
7. Water bodies
8. Natural Channels (including permanent canals and ditches through which water may flow)
9. Roadways
10. Distance from the well to the nearest shoulder of an Interstate highway
11. If the location plat is being used as the AOR map as well, then an outline describing the AOR radius around the well location must be depicted and labeled as such. (Refer to the Application Instructions for the associated AOR radius).

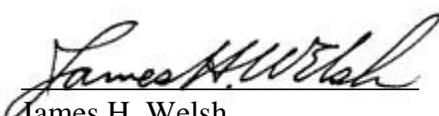
E. *Seals, Signatures, and Certifications*

1. All plats certified after the effective date of this policy must with have the following specific items:
 - a. The seal of the licensed Professional Land Surveyor who assumes responsibility for the accuracy of the field work and plat. Original rubber stamped seals or computer generated seals may be used as long as they are of acceptable design and size. Computer generated seals must have an original, handwritten signature adjacent to or across the seal with the date written below.
 - b. The licensee's original, handwritten signature and date in contrasting ink.
 - c. The following statement: "I, [insert licensee's name], Professional Land Surveyor, certify that the well location depicted and described in this plat was

[staked or located] and surveyed in the field by me or under my direction with accuracy and precision to the nearest foot. I have properly examined ~~this plat and have determined that it complies with existing local Louisiana codes, and has been properly site adapted to use in this area.~~ *the survey and plat, and have determined that it meets the minimum standards of practice for land surveying in the State of Louisiana.*[†]”

2. All plats certified before the effective date of this policy must have the following at a minimum:
 - a. The seal of the licensed Professional Land Surveyor who assumed responsibility for the accuracy of the field work and plat. Original rubber stamped seals or computer generated seals may have been used as long as they were of acceptable design and size. Computer generated seals must have a handwritten signature adjacent to or across the seal with the date written below.
 - b. The licensee’s handwritten signature and date.

APPROVED BY: 
Joseph S. Ball
Injection and Mining Division

APPROVED BY: 
James H. Welsh
Commissioner of Conservation

† Added or amended May 24, 2011.